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Recent Advances in Veterinary Surgery in Relation to Small-Animal Practice*

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I HAVE been asked to confine my remarks to small-animal surgery and there at least two very good reasons for this decision. Firstly, my own experience in veterinary surgery has been confined mainly to this field and secondly, it is a fact that most of the major advances in veterinary surgery and in anaesthesia have been pioneered in the small-animal field and later applied to the large farm animals, with varying degrees of success. In the educational sphere I am sure that if small-animal (that is, dog and cat) practice had not been the responsibility of our profession, we would have had to study their diseases as part of the training of a veterinarian in the broad field of diagnosis and operative technique as a basic discipline.

In writing these two papers† I have tried to meet the requirements of practitioners who have not had much opportunity of discussing systematically advances that have taken place since last they underwent formal study. At the Glasgow School we try to meet this demand by running a short post-graduate course for practitioners every year. In selecting subjects for discussion I have given preference to those where new knowledge has become available or where new techniques have been developed.

I propose discussing advances that have taken place in the surgical field under five main headings:—

I. Improved methods of diagnosis (radiology, endoscopy).
II. Improved methods of anaesthesia.
III. Improved techniques arising out of the accumulation of knowledge on matters relating to infection and its control, shock, orthopaedic surgery, etc.
IV. Improvements associated with increased knowledge of endocrinology.
V. General improvements that have taken place resting on the development of new techniques, or on the application of empirical knowledge.

I.—Improved Methods of Diagnosis

Physical examination will always be an important component of diagnosis but ancillary methods can contribute considerably to the accuracy of diagnosis. Properly used, ancillary methods do not impair a clinician's ability to reach a diagnosis on evidence provided by physical examination but can enhance it greatly. If a veterinary surgeon is able to correlate a clear-cut syndrome with a characteristic X-ray finding, a recognisable endoscopic picture of a constant reaction to a biochemical test, he develops confidence in the result of his physical examination. It is interesting to look at the case of MacKenzie, the Scottish cardiologist who advanced our knowledge of heart diseases by using recording drums and tambours on his patients. He discovered by his instruments data not otherwise available but he also found occurring simultaneously what were at first almost imperceptible changes in the physical signs present. In time he found he could dispense with his drums and could, by close study of these clinical signs, come to a diagnosis in many cases which had been previously unrecognisable. This approach applies with equal force in the veterinary field.

I am giving a paper on advances in small-animal medicine at this congress and what I have to say on diagnosis related to medicine applies equally in the surgical field. Medicine and surgery are merely two facets of veterinary science and diagnosis is the most important part of clinical work. Improved methods of diagnosis have widened the range of operations that can be carried out, particularly in the obscure abdominal conditions. It is possible to come to a

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† The first paper entitled "Recent Advances in Small-Animal Medicine" was published on July 27th.

much more precise diagnosis in a case where there is an inaccessible lesion in, say, the pancreas or the upper lobe of the liver by using ancillary aids. These include the following—the use of haematology, biochemistry on body fluids, liver function tests, radiology, endoscopy, bioscopy and exploratory operations. I will discuss, in a general way, two of these particular subjects, radiology and endoscopy, to illustrate my meaning and select for further description one or two diseases where these aids to diagnosis are of particular value in the field of small-animal surgery and where new information has become available either in diagnosis or therapy.

The justification for using ancillary aids for clinical examination is that new information becomes available. Diagnosis has well been described as coming to a conclusion on insufficient evidence and therefore it is justifiable to use any means that will produce additional evidence.

(1) *Radiology*

Probably radiology represents the most important single aid to diagnosis, in the field of small-animal surgery particularly. Radiology has been used for some time in veterinary practice but at first it was limited to showing deviations from normal in long bones. This type of interpretation is relatively simple to understand but a great deal of new information has become available on interpretation of the much more difficult and finer shades of deviations from normal in soft tissues. For instance, used skilfully and by selecting the appropriate kind of rays, soft structures can be made to show up, fluid abscesses, etc. A great deal of work has been done in the recent past on chest abnormalities, different types of pneumonias, neoplasia affecting lymph-nodes, and enlargement of organs.

It is important in using any approach to a subject to know about its limitations and in this respect one should remember that many foreign bodies are non X-ray opaque. For instance, wood will not show up, certain kinds of soda glass, the type of rubber known as art gum, sponge rubber, thin rubber fishbones, cloth, cotton wool, etc., and calculi composed of certain substances, for instance, cystine and uric acid, may not show at all. A skilled radiographer will also select the type of rays appropriate for the particular case and, properly used, an X-ray unit can produce photographs that will show up changes in the soft tissues like lung and will readily demonstrate neoplasms, etc.

Direct radiographic examination will demonstrate most foreign bodies and gross changes in any of the thoracic and abdominal organs. It is usually possible to demonstrate large lymphatic nodes in the chest, deviations from the normal position of the bronchus and large vessels and the presence of neoplasia in the lungs. Gross changes in the liver and abdominal organs can also be detached.

Indirect approaches to the use of X-ray constitute the use of barium or bismuth, air, iodine compounds and a host of other dyes that are being used and are X-ray opaque. I do not propose going into details of these but merely to mention one or two that may not be so well-known. For instance, the use of air into the bladder has been used to demonstrate the outline but pneumoperitoneum is less used in veterinary practice than it would merit. The injection of air into the peritoneal cavity producing a pneumoperitoneum is invaluable in showing the outline of the abdominal organs. For instance, a case with enlarged abdomen, due to pyometra, associated with a thin walled uterus, may give little precise information as to the reason for recognisable opacity but the injection of a little air shows the convolutions etched out completely by a dark line of air. This technique also shows the separate lobes of the liver, the outline of the kidneys, the outline of the bladder and the bowel, and can be used to demonstrate early pregnancy.

A comparable picture follows an interesting sequel to certain accidents in dogs (usually due to car injury) involving injury to the chest with the development of a pneumothorax. Here the lung lobes and outline of the heart show up distinctly surrounded by a black line. The origin of air in these cases is obscure but many cases make an uninterrupted recovery.

The use of barium is of great value in oesophageal conditions and can be used to demonstrate conclusively neoplasia of the oesophagus, a fairly common condition in cats. It also shows the condition of mega-oesophagus, strictures, slightly X-ray opaque foreign bodies in the oesophagus and can at least lead one to suspect the presence of a persistent *ligamentum arteriosum* associated with a right aortic arch. Barium is also useful in demonstrating abnormal function at the pylorus such as pyloric spasm. This condition tends to occur in our patients in a correspondingly older age group than it does in humans but the operation described by Von Ramsted for the relief of the condition in babies is equally successful in selected cases in dogs and cats. A paracostal incision is probably the best surgical approach to the pyloric region and the pylorus is incised with one or two deep incisions penetrating through both muscular coats and allowing the mucous membrane to bulge. This mechanically enlarges the lumen and allows the passage of food from the stomach to the duodenum. While the history in these cases is suggestive of the presence of spasm of the pylorus, I would always wish to get radiographic confirmation before using a surgical approach to these cases.

Indirect approaches using radiological contrast media are fully described in the literature and I will not deal with these here but it is my opinion that these procedures have reached a stage when they can be applied in ordinary small-animal practice and greatly add to precision in diagnosis. In deep-seated conditions associated with sinus-like perinephritic abscess, or fistula of the anal region, the use of barium or other X-ray opaque substance, injected under pressure into the sinuses, is exceedingly helpful in giving exact information as to the extent of the diseased process. X-ray opaque kidney dyes give good evidence of kidney function and outline kidney, pelvis, ureters and bladder, rendering it possible to make a diagnosis of hydronephrosis and obstruction of the ureter.

Direct or indirect radiographic examination of the central nervous system can show up neoplasms in the spine, prolapse of the pulpy nucleus of the intervertebral disc. Direct examination also reveals the condition described by Lawson and Martin and their colleagues in the Glasgow School of otitis media with sclerosis in the middle ear. Arteriograms in dogs can show abnormalities acquired and congenital. Cardiac catheterisation has been used to acquire evidence in cases where it was suspected that septal defects had occurred. In these cases it is necessary to use radiology to ensure the siting of the catheter so that blood samples taken and tested for dissolved gases can give the kind of information that will be helpful in establishing the presence of those septal defects which allow abnormal flow between left and right heart.

In this section I shall describe briefly some conditions in which the exact diagnosis rests on radiological evidence.

(i) *Otitis media in the cat*: This condition has been described by Lawson, Martin *et al.* in Glasgow as giving rise to some degree of inco-ordination, often disparity in the pupils, and a range of symptoms directly attributable to vestibular trouble. Improvement may follow the parenteral administration of antibiotics or by the surgical approach suggested by McNutt and McCoy establishing drainage through the osseous bulla into the pharynx.

(ii) *Luxation of intervertebral discs*: This condition has been described in some detail by Hansen and Olson, and by Hoerlein in America. Donald Lawson of Glasgow has studied this and related spinal diseases and has clarified the position from the practitioner's point of view. In many cases the condition, as a result of the deposition of calcium in the prolapsed disc, can be diagnosed by direct X-ray examination. In other cases it may be necessary to inject an X-ray opaque substance into the *cisterna magna* and carry out a myelographic examination.

(iii) *Septal defects*: These can be picked up in dogs by the passage of a catheter *via* the cephalic vein into the left ventricle and by sampling the blood at intervals. This gives a measure of its oxygen content at a given position (checked by X-ray); deviations from the normal for arterial blood is presumptive evidence of a communication with right heart.

(2) *Endoscopy*

This medium adds considerable information to what is available by other means. In one specialised field it is of infinite value and ophthalmoscopic examination is a prerequisite to diagnosis in practically all eye cases. Skilled use in this instrument will add immeasurably to the information that is available from an ordinary physical examination. It may well be that one can diagnose by ordinary means such a thing as luxation of the lens, obvious changes in the cornea, glaucoma etc., but it is absolutely essential to make a study of the eye with an ophthalmoscope before a definite diagnosis can be made in any of the more deep-seated cases. Skilful use of the ophthalmoscope shows up changes in the retina like the condition of progressive retinal atrophy in dogs that has been described in length in the recent past, a hereditary condition associated with the presence of a double recessive gene.

The oesophagoscope is an extremely useful instrument in dogs for both diagnosis and therapy. I have had a number of types made to my own pattern and have come to the conclusion that the one with proximal lighting is most suitable. This obviates the unpleasant necessity of removing the lighting part in a distally lit oesophagoscope each time it becomes soiled and it is also useful to have incorporated in the tube a channel in the wall which opens at the distal end and to which negative pressure can be attached to remove any fluids that may gather and obscure the field under observation. It is surprising how large an oesophagoscope can be passed in even a very small dog. A $\frac{3}{4}$-inch diameter tube can be passed in a 20-lb. dog. This is not surprising when one considers the large bolus that can be swallowed or regurgitated. A very large number of the foreign bodies that are lodged in the oesophagus can be removed with the aid of large crocodile forceps like Hauptner forceps used inside a large oesophagoscope. Any sharp edge of the foreign body is drawn into the tube and the whole removed in one part. One difficulty about the use of a big bore oesophagoscope is the danger of compressing the larynx and it is very good policy in these circumstances to leave a clear airway by passing down a McGill's tube into the trachea. This renders the passage of the oesophagoscope a little more difficult but this disadvantage is far outweighed by the increase in safety which arises.

I also use the ordinary human type of laryngoscope for dogs. It allows a thorough examination of the larynx, tonsils and posterior nares to be carried out and, by this means, foreign bodies, tumours, injuries, can readily be detected. A bronchoscope is useful for dogs, the child size being suitable and can also be used for the oesophagus of a cat. With the aid of a bronchoscope it is also possible to pass the bifurcation of the trachea and, by varying the dog's position, to pass the tube into both bronchi and explore for a short distance. By this means it is possible to make an examination of this area and remove a foreign body and make a positive diagnosis by the removal of a small amount of material from cases of *Filaroides osleri* infection in dogs. In all the pathological conditions of the oesophagus, an oesophagoscope is extremely useful as it makes it possible to see precisely what changes have taken place.

A proctoscope is also a useful instrument. I have usually used a child's proctoscope and found this very useful for dogs although the adult size can be used in larger dogs. It is an advantage to use one with a slight magnifying telescope attachment capable of shutting off the area completely and with a side attachment that permits of the injection of air otherwise the clinging of the mucous membrane of the rectum often makes observation very difficult.

A cystoscope can be passed in bitches. This is quite a useful instrument and allows one to make a careful examination of the lining of the bladder.

Tumours can by this means be observed directly.

An auroscope is of distinctly limited use in the dog in view of the fact that the ear canal turns at almost right angles and the drum is always very remote and examination can cause pain. I believe there is a rubber auroscope on the market which will minimise these disadvantages but, even when I have had animals under an anaesthetic, I have found it in certain cases very difficult to make a thorough examination of the ear drum.

The information which one gets from an endoscope in certain cases cannot be acquired in any other way than in an exploratory operation. For instance, a proctoscope can be used for the removal of a piece of tissue from the bowel for a biopsy with only minor surgical interference. If this is put through by quick freeze method there is always the chance of a final diagnosis in a very short period, sometimes while the patient waits.

II.—Anaesthesia

Anaesthesia has contributed much to advances in surgery. For many years only local anaesthesia and inhalation of ether or oxygen in an open circuit, with or without the premedication of atropine were the methods employed. In the 1930s Markowitz described an auto-inhalation method in dogs using ether and a similar method was used in practice by Angler in Britain. The intravenous use of barbiturates became popular in Britain during the 1930s and their introduction led to an extension of the range of operations that could be carried out by the veterinary surgeon in practice, particularly the single-handed veterinary surgeon. Since then developments have been very rapid and include the short-acting barbiturates, cyclopropane, nitrous oxide combined with trilene and many others. More recently relaxants have been regularly used and premedication drugs like chlorpromazine are fairly widely applied.

These improvements, particularly closed circuit anaesthesia, and positive pressure anaesthesia, have increased enormously the range in which it is possible to expect reasonable results in veterinary surgery in small-animal practice.

Obviously a veterinary surgeon's choice in practice of anaesthetic will vary in individual cases but he will probably work out a routine having regard to his available staff and facilities. For major routine surgery in a general practice, the following routine is probably one of the best available at the moment.

First, a short acting intravenous barbiturate followed by intubation and a closed circuit anaesthesia, using either cyclopropane, ether or ether combined with nitrous oxide in a Boyle's apparatus. This gives excellent results and is easily managed.

In the case of the cat it is necessary to give a relaxant like succinylcholine to avoid laryngeal spasm prior to passing the tube. Lawson of Glasgow has used an uncuffed tube which has proved of great value in the case of the cat.

Improved methods of anaesthesia have greatly widened the range of surgery, particularly in the chest, and I will briefly describe the general techniques in two operations that have now become routine, namely, diaphragmatic hernia and transthoracic oesophagotomy.

Diaphragmatic hernia operations have been carried out in the dog for nearly 20 years. The approach was usually from the abdomen and this may still have advantages in certain cases but, having regard to the fact that the extent of rupture is often not known prior to the operation, and that it may well involve half the diaphragm, there is an obvious advantage in attempting to suture this from the front of the convexity rather than the much less accessible route behind. In this operation it may be desirable to remove a rib but, if a good retractor is used, and the space between the rib is opened sufficiently far, it is possible to operate without the removal of the rib at all. If the rib is removed, the periosteum is split and the rib denuded down the middle, the periosteum and pleura being pushed backwards at their attachment to the posterior aspect of the rib. This gives a very good view of the diaphragm and in most cases it is possible to suture without any difficulty. The same procedure gives a very good access to the oesophagus and where a foreign body is lodged that cannot be removed, it may be access can be got to the oesophagus and the body lodged within the chest can usually be removed.

Thoracotomy is more serious than laparotomy in that there is no convenient structure like the omentum for sealing wounds. In cases of transthoracic oesophagotomy it is often satisfactory to avoid feeding by mouth for five or six days after the operation. From time to time, cases of congenital abnormality crop up in the dog associated with development of the heart or the large vessels and my colleagues in Glasgow have operated on cases of right aortic arch ligamentum arteriosum. I think this field of surgery will probably remain the specialist's domain and is not likely to become routine for practitioners. For instance, where there is a patent foramen ovale, very complex diagnostic procedures are required to establish the nature of the abnormality and its extent prior to operation. This involves the passage of a catheter from the subclavian artery or *via* the jugular into the auricles and thence to the ventricles. From this, at various stages, blood is removed and its oxygen content tested with the object of discovering whether, in fact, there is a back leak from the left to the right side of the heart.

X-ray photography is also beneficial in these cases but inevitably this type of equipment is unlikely, in the immediate future, to become readily available to practitioners. The question of economics will always be an important one in practice.

Experimental surgery has been of great value in this field in developing new techniques in anaesthesia that can later be applied to both human and veterinary practice. Experimental work in dogs has made it possible to by-pass the heart completely during surgical approaches to this organ for the correction of defects and I understand that some surgical units like the Mayo Clinic are using this technique during surgical correction of certain heart abnormalities previously unapproachable.

Hypothermia has also been used in dogs but I do not think it has any practical application to small-animal practice at the moment.

III.—Improved techniques arising out of the accumulation of knowledge on matters relating to infection and its control, shock, orthopaedic surgery, etc.

The advances in this branch of surgery are easy to follow as progress has occurred in very definite stages. Each advance has resulted in dramatic improvements in surgery. Manual dexterity will always be an important requirement in operative surgery but it is an interesting capacity varying widely in different individuals. Surgeons are born, not made.

The general improvement that has taken place since Listerian principles were applied to surgery is well known and needs no description. They were belatedly applied in the veterinary field with varying degrees of success. In the early 1920s asepsis was introduced into veterinary surgery. For some time human surgeons had been replacing antiseptic surgery with aseptic surgery and the translation of those techniques were not difficult to veterinary surgery. The most important pioneer in this field in Britain was William Mitchell of the Dick School in Edinburgh. I have no doubt that many other people were working on it at the same time but it is a fact that he alone, for some considerable time in the early 1920s, was practising aseptic surgery in both dogs, cats and large animals. Within 10 years it was being generally practised in small-animal surgery in Britain and, to a lesser extent, to large-animal surgery throughout Britain. These techniques brought great improvement in results and extended the operations that were successfully undertaken by veterinarians.

The next important stage was heralded by the discovery of the sulphonamides and then followed the introduction of a wide range of chemotherapeutic agents used to control infection, either by parenteral or topical administration. The additional sterility achieved by this means made for considerable advance in the practical field of veterinary surgery. Theoretically, asepsis should have been adequate to cover all the extraneous contamination of wounds but it had not been realised that many wounds, particularly those associated with extensive damage, could easily become infected by the blood-borne infection. In our patients, wounds readily became contaminated and the topical application of sulphonamides, reinforced by the parenteral administration, gave a greatly enhanced degree of protection.

The next important advance was, of course, the introduction of penicillin. The principle involved was the same as with the sulphonamides but the origin of the antibiotics was unique. The main improvement arose from the fact that penicillin could be used in large doses with little or no systemic disturbance. This applied with varying degrees to the new antibiotics which were introduced in rapid succession during the course of the next few years. Lister's idea of an internal antiseptic harmless to body cells, and capable of controlling or destroying disease organisms, had now been achieved.

The antibiotics have an application in every field of surgery but I will discuss penicillin in relation to two major veterinary conditions.

(1) *Obstruction of small intestine in dogs*

The introduction of a new therapeutic often brings with it new knowledge on a group of diseases of similar nature, or to disease conditions resting on a complex aetiological basis where the responsibility to be attached to the component causes could not precisely be gauged. This can happen when a new antibiotic or a chemotherapeutic agent with a specific action is introduced. A useful instance where the introduction of new therapy has clarified a problem involving complex aetiological factors is the case of obstruction in the small intestine which was not well understood. The introduction of penicillin made it possible to study, by the experimental method, the importance of the bacterial toxaemia in these cases. Penicillin appears to control the development of bacteria and minimises the loss in obstruction. Markowitch describes a series of interesting experiments carried out in dogs by a variety of workers that throw a great deal of light on the importance of the component causal factors. Penicillin is capable of protecting a case of complete obstruction of the small intestine, created experimentally, provided steps are taken to ensure that the fluid balance of the patient and the electrolytes were maintained at a normal level. Until comparatively recently there was a great deal of discussion as to whether the cause of death from obstruction arose from dehydration, loss of electrolytes or toxaemia. Now it is fairly clear that in cases of high obstruction in the small intestine our patients die as a result of loss of chloride, loss of fluid, with the resultant alkalosis, the dehydration, oliguria, toxaemia, and uraemia. In low obstruction in the ileum dogs usually die from bacterial toxaemia as a result of the distension of the bowel with greatly increased bacterial activity, devitalisation of the mucous membrane and as a result of the distension with the abnormal passage of toxins into the blood stream. Other factors operate and the last word has not yet been said but a knowledge of the fundamental changes that are taking place put the veterinarian in a position of applying rational treatment either as supplement to his surgical approach, or, in certain cases, as a substitute for it. This knowledge has greatly reduced the mortality in a condition which was always serious and often fatal. In certain cases of obstruction it might be possible to obviate operation entirely by the maintenance of water and electrolyte balance and by controlling toxaemia by penicillin. Thus it is clear that a dog with an obstruction near the duodenum must have chlorides and fluids replaced. It has been shown experimentally that a dog with a complete obstruction near the duodenum will die within two days, but if fluid lost by vomiting is replaced he will live for a long time. It has also been shown that a dog with a completely occluded loop of the ileum will die in a few days' time, but in many cases would live indefinitely if penicillin is put in the isolated loop or given parenterally. The loop would show local reaction but the penicillin is able to control the multiplication of the bacteria and resultant toxaemia and death.

(2) *Internal fixation of fractures*

The history of the internal fixation of fractures stems from the dissatisfaction on the part of surgeons with the results obtained with the more conservative methods.

As long ago as 1908, the famous Glasgow surgeon, Sir William McEwan, was experimenting with the use of sterilised bone medullary pegs in dogs in an attempt to attain satisfactory fixation. The results achieved were variable. The use of metal plates and screws was first adopted by Arbuthnott Lane. Both these workers had difficulty in achieving satisfactory asepsis and these difficulties led to the extreme precautions known as the "no touch technique." Despite the extreme measures adopted, some trouble persisted and it was not until the electrolytic effect of different metals within the body was demonstrated by Venable and Stuck that really satisfactory results were obtained.

I remember carrying out my first open reduction in the late 1930s on a West Highland Terrier which had incurred a fracture of the lower end of the femur some months previously. Fibrous union had taken place and the leg was unable to bear weight and was like a flail. The ends were freshened and sutured with silver wire and satisfactory union took place with complete restoration of function. As might be expected, this technique had very limited application and complete success was the exception rather than the rule.

The advent of antibiotics greatly widened the range of surgery generally and of bone surgery in particular. In 1949, Gordon Knight of London reported on bone surgery using a penicillin umbrella. In the same year at the International Congress, a number of American veterinary surgeons reported improved techniques in bone pinning and the use of penicillin.

During and after the war, the use of such methods as Stader and Kirschner-Ehmer splints and intramedullary pins and nails became a recognised method of treatment for midshaft fractures of long bones and has been responsible for considerable improvement in the results obtained. Certain other fractures, especially those close to joints, are however not so amenable to treatment by those methods.

Such fractures as that of the ulna at the level of the elbow joint and simple fracture of the os calcis present a special problem as there is a constant distraction of the fracture due to the attached muscles. For these two fractures the use of an olecranon screw —a lag screw which has a shaft narrower than the thread—is almost ideal as it both corrects the alignment and impacts the fracture.

Fracture of either lateral or medial condyle of the humerus presents a feature that the shape of the articular surface of the bone forces the fractured faces apart. Here the use of a Webb bolt—a lateral compression device—is giving very satisfactory results.

The distal epiphyseal fracture of the femur, a common occurrence in both dog and cat, has two special features; the posterior displacement of the lower portion by muscle pull and the very thin cortices of the bone. For this site many different methods have been employed by different workers and Donald Lawson of the Surgery Department of the Glasgow School, who has an article in preparation on this subject, has for some time been using two "Rush" pins with very good results. This type of pin was first introduced into human medicine and had so far not been reported as being used extensively elsewhere in animals. The pins are round sectioned and small compared with the size of the medullary canal. They are inserted obliquely so as to bend against the opposite cortex and act as a spring and are placed so that they counteract the muscular pull which is responsible for the displacement. These pins, because of their shape, are useful very close to joints and have proved to be especially useful in fractures of the distal epiphysis of the femur, the distal end of the humerus and the distal epiphysis of the tibia and fracture of the malleoli—all sites where ordinary intra-medullary pins are of little value.

Bone plating is also useful in lower end of radius fractures that would otherwise be very difficult to treat.

Fractures of the mandible can very simply be treated by methods used by Lawson in Glasgow. A small pin is inserted from the sound site on a line posterior to the line of fracture, passed on a line under the line of the roots of the teeth and the mucous membrane of the floor of the mouth, coming across to the opposite side and engaging the ramus. This produces fixation very easily. In the case of a double fracture, rigidity can only be achieved by the Kirschner type of splint suitably applied.

(3) *Joint Surgery*

I can remember that at one stage joint surgery was only carried out when it was absolutely necessary, but the antibiotics have made this field of surgery relatively simple of approach. Swedish and Finnish workers, Nils Nilsson and Paatsama, have described some operations which they carry out as routine in the dog for abnormalities in this joint. Incidentally, the description of clinical examination in the stifle joint of the dog is a classical work by the latter and should be consulted by anyone interested in this field. As a regular procedure he opens the stifle joint and, in suitable cases, removes the meniscus. His routine examination of stifles is excellent and he describes clinical signs present in rupture of cruciate ligament, tearing of menisci, rupture of collateral ligaments and arthritis of the stifle joint.

IV.—Improvements associated with increased knowledge of endocrinology

Clinical manifestations of abnormal endocrine factors have probably interested those concerned with live-stock since man domesticated some of the animals. Endocrinology is a fairly new science and, until comparatively recently, the only steps taken by man to modify the endocrine balance have been effected by castration. In cattle practice a high level of fertility is of paramount importance and the endocrines associated with reproduction have been studied intensively in the last 30 years. In small-animal practice endocrinology has received less attention but there are a number of clear-cut conditions about which

information is growing and where the veterinarian can considerably help his patients.

Abnormalities in endocrine function appear to be associated with metabolic, neoplastic or inflammatory changes. As the sex hormones have a major rôle to play, it might be convenient to discuss these in relation to the sexes although I know that conditions like hypothyroidism apply in medicine equally to both sexes.

(1) *Males*

(a) *Abnormalities of the prostate.* The prostate gland in dogs can undergo inflammatory, cystic, hyperplastic, and neoplastic changes. Enlargement tends to give rise to interference with bowel function and the triad of enlarged gland, constipation, and perineal hernia is well known to practitioners. It has been known for a long time that castration causes diminution in the size of the normal prostate and this effect also follows in some of the above conditions, even where neoplasia is involved. A similar effect can be produced by the administration of stilboestrol effecting what appears to be a type of chemical sterilisation.

In some cases of Sertoli-celled tumour the prostate may vary in size. In a number of cases it is diminished but occasionally it is greatly increased in size.

It is my general observation that any substance that gives rise to regression in tumours appears to do so more successfully when first administered: doses given subsequent to a reappearance of the neoplasm are usually much less successful. This is true of stilboestrol in cases of prostate enlargement due to tumour and also in cases of anal adenoma. It also applies to some experimentally induced tumours in mice where chemical substances have been found to have an inhibitory effect, and Brodey reports that cortisone will, in the first place, cause a marked regression in mast-cell sarcoma and in multicentric lymphosarcoma in dogs.

(b) *Anal adenoma.* A neoplasm of this type appears to rise from the small specialised sebaceous glands that are present in the skin and in the region of the prepuce. These sebaceous glands appear to be associated with the sex endocrines. Anal adenoma occurs mainly in the male but Cotchin, in his survey on tumours, reports that 2 per cent. of cases occurred in females. The adenoma develops near the rim of the anus. It grows slowly, frequently ulcerates showing a tendency to an oozing haemorrhage. There is little tendency to metastasis but local infiltration can be extensive. Treatment is surgical removal but, because of the lack of clear definition at the edge, it is advisable to take a fairly large area of tissue to ensure complete removal. In cases where the veterinary surgeon has not been consulted until the tumour has become very large and ulcerated, stilboestrol can be used to cause regression and, after a suitable interval, to allow the excretion of the excess oestrogens, a radical operation can be carried out much more easily than would have been possible at first.

(c) *Sertoli-celled tumour of the testicle.* There are three main types of tumour in the testicle but the Sertoli-celled is probably the only one to give rise to secondary sex changes. I know feminism has been reported associated with seminoma but there is no conclusive proof that there was not also present a Sertoli-celled tumour. My colleagues in Glasgow report that these tumours may be present simultaneously in quite a high proportion of cases. It is also true to say that Sertoli-celled tumours can also be present without any endocrine upset. This tumour grows from the sustentacular or supporting tissue which has no known endocrine function and yet the tumour appears in many cases to produce oestrogens in large quantities. When feminism takes place the dog's nature and appearance change. He becomes dull and unwilling to take exercise; he may attract male dogs as if he were a bitch in oestrus and may encourage or resent their advances. It is often because of this aspect of the problem that the veterinarian is called in in the first place. The owner may not know of any other abnormality. The clinical appearance varies, but in general, is like a case of myxoedema. The body becomes round, the undercoat is lost, the long hair persists, there is often alopecia, bilateral and symmetrical, the mammary glands become enlarged and the prepuce drops. The testicle, which is often ectopic, becomes obviously enlarged while the normal testicle atrophies. Castration is followed by dramatic improvement.

(d) *Cushing's disease or Cushing's syndrome.* Coffin *et al.* describe a canine Cushing syndrome associated with basophil tumour of the pituitary gland with enlargement of the adrenals. The blood picture shows a reduction of lymphocytes and eosinophils. There is baldness of the skin with pustulation. The main clinical difference from a case of Sertoli-celled tumour is that the fat tends to become deposited in the abdomen, not subcutaneously. There is polypsia and polyuria. I am afraid I have not recognised this condition in practice but, looking back, I may well have missed it and attributed the signs to hypothyroidism. I am, however, on the look-out for it now and will no doubt find cases before long. It is a truism that in practice one never finds anything until one starts to look for it.

(e) *Frolich's syndrome.* Adiposo-genital dystrophy. This condition (first recognised in humans) has been described in dogs. It is associated with excessive fat deposition and hypoplasia of the genitals. We suspected the presence of this disease in two cases in the hospital but we have not had the opportunity of carrying out a *post-mortem.* Diabetes may be present.

(2) *Female*

(a) *Pyometra.* I do not know of anyone who is in a position to explain completely the changes leading up to the development of pyometra in small-animals but a great deal of information is now available on this disease and it may not be long until the story is complete. It is generally accepted that the

condition is of endocrine origin and that it will only develop in an animal capable of producing oestrogens. I know of no cases that have occurred in bitches that have been sterilised when young by complete removal of the ovaries, even when the uterus was left in. Pyometra can develop where sterilisation has been carried out by ligation of the Fallopian tubes and even where the smallest piece of ovary has been left at an ovariotomy when the animal was spayed as a pup. Even in cases that have developed pyometra and cleared up spontaneously or responded to therapy, pyometra will not develop if the ovaries are removed before the next oestrus is due. It is well known that such cases would often develop a recurrence of the pyometra following the next oestrus. My colleagues in Glasgow are carrying out extensive investigations on this condition. Among other things, they have completely confirmed my experience in practice that large doses of oestrogens are completely contra-indicated in this condition. The presence of oestrogens appeared to be necessary to initiate the cycle that leads to the development of pyometra but other factors may be more important in direct causation.

(b) *Mammary tumours.* In a manner that has not not yet been explained, oestrogens bear an important relationship to the development of mammary tumours. The onset of oestrus will cause tumours in the mammary gland of the bitch to increase in size and regression will take place in simple tumours during the next few weeks. There is evidence that malignant tumours will continue to develop without any regression. The condition of fibro-adeno cystic mastophy occurs in bitches and can occur simultaneously with the development of tumours in the gland. My experience in the last few years has led me to the conclusion that it is impossible, and often dangerous, to give a prognosis in mammary tumours based on their appearance. Relatively simple tumours like myoepithelioma may grow rapidly, ulcerate and have all the features suggestive of malignancy but can be removed and a good prognosis given. On the other hand, we have had cases of adenocarcinoma where the primary lesion in the mammary gland was so unobvious as not to have been noticed. Such cases may have been brought in for treatment for respiratory signs which were later found to be associated with the development of secondaries in the lung.

In practice I recognised the important part that oestrogens played in producing mammary tumours by stimulating mammary tissue and I made it my aim to remove the entire mammary gland as soon as this was practicable. If permission were granted by the owner, this was usually done at two or three subsequent operations. In advising this radical treatment, I had accepted that some substance or combination of substances produced in the body had the specific effect of stimulating only mammary tissue with the development of neoplasms and I considered that if all the mammary tissue were removed the possibility of further trouble would be ruled out.

My colleagues in Glasgow have tackled the problem at a different point and have now a series of cases of mammary tumours from which the ovaries have been removed, thus reducing to the minimum the oestrogenic bombardment that would otherwise take place. They appreciate that some oestrogens, in these circumstances, might still be produced in the adrenals, and in one or two selected cases, they have removed these glands. They have also carried out radical mastectomy wherever possible. So far it is too early to pronounce judgment on these cases.

I know that in practice it is often extremely difficult to have a biopsy carried out on a tumour but I feel it is very well worth while whenever it is possible.

V.—General Improvements

A wide variety of advances has arisen from the introduction of new techniques, often arising from new knowledge in relation to a particular disease. I have only time to list some of these here and make very brief reference to these advances.

Dental conditions in dogs.

There is a good deal of new information available on dental conditions in dogs and recently a number of veterinary surgeons have been using elevators, not in the conventional way of raising the roots, but as a lever placed between the roots causing pressure on the bone to lift the complete tooth. Previously it had been necessary to remove the external plate of bone or to split the tooth but in many cases this simpler technique is satisfactory.

Granuloma of cat's lip

It is now recognised that this condition, previously described as rodent ulcer, and invariably treated surgically, is an inflammatory reaction and responds to the administration of one per cent. crystal violet. Aural resection has been practised for many years in dogs for the relief of external otorrhoea and the plastic modification of this operation, described by Zepp. is an exceedingly important contribution to veterinary surgery. A number of modifications have been introduced which are probably improvements on this operation.

Urolothiasis in cats

This has always proved a troublesome condition but the operation recently described by Robert McCully involving prepubic urethral transplantation is a great improvement on any previous treatment.

Chip fracture of the accessory carpal bone

It is now some time since this condition was first described by Bateman (1951) but many veterinary surgeons do not seem to be aware of the beneficial results which take place in a number of cases following resection of the extensor digiti quinti.

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Discussion

Mr. R. Menard (Jamaica) took the chair at the morning meeting. In his introductory remarks the Chairman expressed his regret at Professor Weipers' illness and extended a welcome to Mrs. M. Weipers (U.K.) who had kindly consented to read her husband's paper for him.

Mrs. Weipers intimated her diffidence about reading a paper on surgery as she laid no claims to being a surgeon. She then read the paper, elaborating upon and showing slides on particular aspects of the paper. The chairman then thanked Mrs. Weipers and introduced Mrs. H. Nestel (Jamaica) who opened the discussion on the paper.

Mrs. Nestel began by congratulating the author of the paper on the scope and quality of his work which showed the wealth of the new material that was coming forth particularly from Professor Weipers' School at Glasgow. Mrs. Nestel said that at the present time veterinary practice in the Caribbean was in its infancy and very few practitioners were able to afford the facilities for elaborate techniques. Nevertheless she felt many of these techniques, such as endoscopy, were neglected far more than they need be by most practitioners. X-rays were used with a relatively greater frequency but even here there was a great deal of scope for improvement. As an example of this she cited some recent work by Dyce *et al.* dealing with pyelography, while spinal myelographs, as Mrs. Nestel had seen them done at London University, were too time-consuming for use in general practice; in human radiology they were now using contrast media which enabled a diagnosis of spinal lesions to be carried out in a matter of minutes. Such a technique might prove of use in veterinary practice.

Mrs. Nestel then discussed in some detail the use of chlorpromazine which she used as a routine premedicant in canine surgery. She had found that a high starch diet with protein deficiency, which was common in Jamaican dogs, caused them to have a low anaesthetic tolerance. She normally used one mg. chlorpromazine per pound bodyweight intramuscularly and followed this with ether by inhalation. She found this to be a very safe and economical method of anaesthesia. For long operations where a barbiturate might be preferred, the chlorpromazine reduced the barbiturate requirement by about 50 per cent. It was her opinion that chlorpromazine effected a great reduction in post-operative shock and cut down the need for blood transfusions and saline infusions. Some cases of radical surgery in toxic subjects were quoted to emphasise these points. In cats, chlorpromazine enabled an animal to be anaesthetised with ether by one person and Mrs. Nestel said she certainly felt much happier dealing with Siamese and albino cats which had received premedication.

One advance which the speaker felt that Professor Weipers had not mentioned was that of the progress made in suture materials. She had always preferred nylon in England but this was not readily available in Jamaica so that another synthetic fibre, "perlon," had been used in its place. This monofilament suture was somewhat less pliable than the same size of nylon. It had been used in her practice both intra-abdominally and on muscle and skin. She had had the opportunity of carrying out autopsies on three cases of ovario-hysterectomy (in which she had buried "perlon") that had either died or were destroyed over six months after their operation. None of these cases had adhesions around the ovarian bursa or the uterine stump, nor was there any granulation of fibrotic tissue present at these sites. The speaker said that she felt that perlon might prove to be superior to braided nylon for internal suturing.

Returning to the paper, Mrs. Nestel elaborated on some of the operations that Professor Weipers had mentioned. The first of these was the rather fashionable complaint of prolapsed spinal discs. She had seen a number of these operations performed and had formed the impression that surgery of this nature could be within the scope of very few practices. In a small number of cases she had had some promising experiences trying medical treatment with phenylbutazolidine*.

Another problem that had interested her was that of a combination of pinning and plating fractures in which large areas of cortical bone had been destroyed. She had found that the periosteum would enclose the plate which could be left *in situ* while the pin was removed at the normal time. Mrs. Nestel said that her X-ray facilities were somewhat limited so that most of her pinnings were done without any radiology. Open reduction was always carried out and the surplus length of pin removed after the reduction. It was a good idea to have some sterile silver wire to deal with any fragments or a case of an oblique fracture. Clinically the results had been surprisingly good with only one case out of a series of 18 being over-pinned and resulting in some stiffness of the distal joint.

Another surgical technique which was easily practicable with some simple apparatus was that of entrance into the thoracic cavity. An operation at this site presenting a great challenge to the surgeon was that of oesophageal resection in cases of either dextraposition of the aorta or a persistent ligamentum arteriosum. Mrs. Nestel described the symptoms of these conditions before going on to deal with the operation itself. She had done three of these operations, two of which were successful, and in none of them was it necessary to resect a rib.

* Geigy.

(*Concluded at the foot of col. 1, page 734*)

A Diluting Effect of Chlorpromazine Hydrochloride on the Circulating Blood of Dogs

BY

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Introduction

THIS work is intended mainly to stimulate interest in the haematological properties of chlorpromazine, and as such can serve only as an introduction to the subject.

Haemodilution as a result of chlorpromazine hydrochloride administration was first noticed when a blood sample was taken from a dog which had been premedicated with this drug. This sample appeared very watery, sedimented very rapidly, and had very low haemoglobin and haematocrit values—findings in no way consistent with the animal's clinical condition. Similar results were obtained from blood taken from a second dog premedicated in the same way, and so it was decided to examine blood samples from a number of dogs premedicated with chlorpromazine hydrochloride prior to surgery.

All animals sampled had been admitted for surgical intervention, and the premedication was a routine procedure.

Methods

The dog under investigation was weighed, and a sample of venous blood was taken (usually from the radial vein) into a tube containing dried citrate. Two blood smears were made from each of the earlier samples but later this procedure was discontinued.

Immediately after sampling, the dog was injected intramuscularly with chlorpromazine hydrochloride 1 mg. per 2 lb. bodyweight and atropine g. 1/200. A second sample of blood was withdrawn as near to 90 minutes after the injection as was possible, occasionally immediately after induction with pentothal.

Total leucocyte counts, haematocrit and haemoglobin values were determined on both samples, and differential leucocyte counts were carried out on the smears made in the earlier cases.

Simple laboratory techniques were used for these determinations. The leucocyte count was carried out on a Thoma Busch Haemacytometer using 1 per cent. gentian violet in 10 per cent. acetic acid as diluent, five counts being made on each sample; the haematocrit value was determined using Wintrobe haematocrit tubes centrifuged at 1,800 revs. per minute for 90 minutes, and the haemoglobin values were determined with a Haldane's Haemoglobinometer.

The smears taken from Series I were stained with Giemsa stain and a differential leucocyte count was made.

A control series of 15 dogs was similarly examined. In these the chlorpromazine premedication was omitted, but the same dose of atropine was given, and again some of the samples were collected after pentothal induction. The results are tabulated on page 735.

Discussion

Total leucocyte count

The leucocyte count, following chlorpromazine premedication, fell in every case, although admittedly the change in the count was sometimes within the range of normal variation in the healthy dog.

Variations in the controls (see Table II) showed both increase and decrease in total leucocyte count, varying between + 17.5 per cent. and − 5.75 per cent.

Haemoglobin and haematocrit values

As with the leucocyte counts a consistent fall in values followed chlorpromazine administration. Haemolysis occurred in some cases in both groups

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Recent Advances in Veterinary Surgery in Relation to Small-Animal Practice: Discussion.—*Concluded.*

An operation which had recently been described in detail in the Canadian literature was that of total prostatectomy. Mrs. Nestel wondered whether anyone present had any experience of this. Another point which she raised in regard to surgical pathology was that of pyometritis, in spayed bitches, arising from the uterine stump. Two cases of this had been seen here. One of them had arisen over two years after the hysterectomy. Another condition which she had noticed in spayed bitches was signs of a mild oestrus. In some of these she was certain that no ovarian tissue was present and she wondered whether adrenal oestrogens played any part.

The last subject brought up by the opener of the discussion was that of the strides made in the approach to surgical nursing. She felt that too much emphasis was still placed on the "antibiotic umbrella" and not enough on saline drips and blood transfusions. The actual treatment of the wound itself was helped by collodion dressing. In Jamaica the application of pressure pads was not very practicable since they became soiled very readily and caused a lot of chafing of the wound.

In conclusion, Mrs. Nestel once again expressed her regret at Professor Weipers' absence since his paper had in it so many fruitful points for discussion.

but was too slight to account for the marked difference in the percentage variation in certain cases, particularly Nos. 4, 6, and 13, for which we can offer no explanation.

Differential leucocyte count

Examination of Giemsa-stained smears of Series I showed no consistent change, and it was decided to abandon this investigation.

No examination was made of the specific gravity of the plasma and we can offer no explanation for the dilution nor suggest the diluent.

Summary and Conclusions

Haematological examinations were carried out on two series of dogs, one premedicated with chlorpromazine and atropine, and the other with atropine alone. The investigation indicated that a consistent but variable haemodilution resulted from chlorpromazine administration. No attempt was made to discover the cause of the dilution or the nature of the diluent.

Acknowledgments.—We are indebted to Mr. G. C. Knight for his interest in our work and to Miss B. M. Q. Weaver for her encouragement and help in collecting many of the samples.

TABLE I

RESULTS OBTAINED FROM CASES IN WHICH CHLORPROMAZINE AND ATROPINE PREMEDICATION WAS USED

Case number	Total Leucocyte Count (In thousands)			Haemoglobin Values (Haldane)			Haematocrit Values		
	Before	After	Per cent. variation	Before	After	Per cent. variation	Before	After	Per cent. variation
1	9·6	9·1	−5·2	145%	136%	−6·2	76%	68%	−10·6
2	11·5	10·5	−8·7	121%	96%	−20·7	68%	41%	−39·8
3	52·0	46·3	−10·9	84%	58%	−31·0	30%	22%	−26·7
4	35·46	28·72	−19·4	76%	64%	−15·8	25%	24%	− 4·0
5	10·0	6·5	−35·0	122%	76%	−37·6	41%	29%	−29·4
6	13·7	11·0	−19·7	102%	88%	−13·7	41%	29%	−29·4
7	20·7	20·6	−0·48	80%	73%	−8·5	52%	47%	−9·7
8	19·7	19·6	−0·5	101%	79%	−21·75	55%	46%	−16·4
9	13·3	10·8	−18·8	98%	78%	−20·5	49·5%	36%	−27·4
10	8·6	5·2	−39·6	140%	100%	−28·6	63%	47%	−25·4
11	14·9	10·0	−32·9	100%	85%	−15·0	48%	39%	−18·75
12	9·2	8·0	−13·0	114%	102%	−10·5	55%	48%	−12·8
13	18·6	16·4	−11·8	108%	100%	−7·4	70%	50%	−28·6
14	21·2	15·8	−25·5	122%	78%	−36·0	65%	43·5%	−33·2
15	15·2	14·3	−5·9	110%	96%	−12·7	40%	36%	−10·0
16	7·6	4·6	−39·5	126%	76%	−39·5	59%	31%	−47·5
17	13·14	10·76	−18·2	96%	73%	−24·0	30%	25%	−16·7
18	20·2	17·2	−14·9	110%	92%	−16·4	40%	35%	−12·5
19	10·4	6·8	−34·5	104%	74%	−28·9	55%	32%	−42·0
20	13·7	11·0	−19·7	116%	80%	−31·0	44%	35%	−20·5

TABLE II

RESULTS OBTAINED FROM CONTROL DOGS IN WHICH ATROPINE ONLY WAS USED FOR PREMEDICATION

Case number	Total Leucocyte Count (In thousands)			Haemoglobin Values (Haldane)			Haematocrit Values		
	Before	After	Per cent. variation	Before	After	Per cent. variation	Before	After	Per cent. variation
A.	6·9	6·6	−4·4	102%	98%	−3·9	45%	44%	−2·2
B.	12·2	12·5	+2·45	112%	114%	+1·0	58%	59%	+1·7
C.	10·4	9·8	−5·75	108%	105%	−2·75	41·5%	41%	−1·20
D.	12·8	13·6	+6·25	109%	110%	+0·9	35%	36%	+2·85
E.	8·0	9·4	+17·5	35%	35%	NC	35%	35%	NC
F.	7·0	7·0	NC	140%	140%	NC	45%	45%	NC
G.	8·2	8·2	NC	135%	130%	−3·7	50%	49%	−2·0
H.	11·45	11·6	+1·3	75%	75%	NC	32%	32%	NC
I.	10·4	10·6	+1·9	110%	110%	NC	56%	53%	−5·3
J.	22·6	22·5	−0·44	63%	63%	NC	25%	25%	NC
K.	7·8	7·8	NC	99%	99%	NC	45%	47%	+4·45
L.	14·8	15·0	+1·35	120%	121%	+0·83	45%	45%	NC
M.	12·6	12·6	NC	106%	106%	NC	33%	33%	NC
N.	12·0	12·6	+0·5	100%	102%	+2·0	43%	43·5%	+1·2
O.	8·8	8·6	−2·25	80%	78%	−2·5	33%	33%	NC

NC No Change.

The percentage variation is the difference between the samples expressed as a percentage of the first sample.

Chronic Diarrhoea in Housed Cattle Due to Atypical Parasitic Gastritis

BY

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Introduction

DURING the spring and early summer of 1956 we investigated 10 outbreaks of severe chronic diarrhoea and emaciation in young dairy cattle on farms in the West and South of Scotland. As autopsies from each of these outbreaks revealed as the only constant finding the presence of large numbers of nematodes, almost entirely *Ostertagia ostertagi*, associated with marked changes in the abomasal mucosa, it appeared reasonable to conclude that the clinical signs were directly referable to the parasitic infestation. The fact that the cattle in 8 of these outbreaks had been brought in from pasture and housed for periods of up to 5 months before the onset of the clinical signs was considered to be an unusual feature of the disease, which is normally associated with grazing animals. Because of this the history of each of the outbreaks was studied in detail and special attention given to the nature of the changes in the abomasal mucosa. The results of this investigation and a discussion of their possible significance are the subject of the present communication.

History

In the outbreaks observed by us the affected cattle were all aged between 12 and 18 months. On 8 of the farms the animals had completed 1 grazing season and were thereafter housed for the winter at various times between October and the beginning of January ; on almost all of the farms the animals were tied individually in stalls. Of the remaining 2 farms the young stock were out-wintered on one, and on the other were housed but allowed access to pasture each day. While in the majority of cases other bovines had shared the same pasture as the young stock during the grazing season, in a few cases the yearlings appeared to have been restricted to certain fields to which they had sole access ; each of these fields, however, had been grazed by adults during the previous year.

When the yearlings were brought indoors none of them had diarrhoea but on 8 of the farms they were noticed to be in poor condition. After a period which ranged from 3 to 10 weeks on individual farms, diarrhoea developed in a number of the young stock ; the time of onset varied among the individuals of each group, although eventually many of the animals became affected. The diarrhoea was profuse and persistent except for occasional short periods of remission and was accompaned by marked loss of weight. Inappetence and an increased thirst were frequently reported in these animals. Generally these clinical signs continued for several weeks and death was the usual outcome. Anthelmintic and antibiotic therapy did not appear to influence the course of the disease or the mortality rate.

Clinical Signs

Several affected animals were hospitalised and subjected to a detailed clinical examination. Each one was in poor bodily condition on arrival at the hospital. Some were extremely weak and all had their tails and hocks badly soiled with faeces.

The diarrhoea which was present in each case was of an extremely fluid nature, normal in colour and free from blood. Defaecation was not accompanied by tenesmus. Occasionally for periods of a few days the faeces became more normal in consistency, but when the diarrhoea returned it was as severe and fluid as formerly.

Loss of weight was marked and accompanied by anorexia. In a few cases subcutaneous oedema of the sub-maxillary space was evident.

No significant or regular alterations in the cardio-vascular or respiratory systems were recorded and none of the animals was ever febrile. Ruminal movements were always present though weak and of short duration.

Blood examinations showed that some animals were mildly anaemic and in these cases the haemoglobin levels were below 8 g. per 100 ml. with the total red cell counts and haematocrit values correspondingly reduced.

A neutrophil leucocytosis was occasionally recorded ; for example in one animal the white cell count was 16,500 per c.mm. of which 78 per cent. were neutrophils.

A notable haematological change present in each animal examined in the hospital was a reduced level of serum proteins. Levels were usually as low as 4 to 5 g. per 100 ml. serum and with albumin to globulin ratios of from 0·2 to 0·6 appeared due mainly to a reduction in the serum albumin.

Table I illustrates these findings

TABLE I

SERUM PROTEIN LEVELS OF 6 AFFECTED ANIMALS

Animal	Total Proteins (g. per 100 ml.)	Albumin/ Globulin ratio	Albumin (g. per 100 ml.)	Globulin (g. per 100 ml.)
6762/4	4·1	0·6	1·6	2·5
6762/6	4·6	0·5	1·54	3·06
6762/7	4·4	0·4	1·26	3·14
6805/2	5·0	0·3	1·16	3·84
6805/3	4·5	0·5	1·5	3·0
7086/1	4·1	0·2	0·69	3·41

The faecal egg counts of individual animals fluctuated, but in most cases counts of over 1,000 eggs per g. were recorded on some occasion. The highest noted was 3,500 eggs per g. In a few animals however, the egg counts were low and in no way suggestive of parasitic gastritis. Three hospitalised animals which

recovered showed a gradual decrease in their egg counts as the faeces became firmer.

None of the animals admitted to the hospital was found to be affected with Johne's disease ; this conclusion is based on the negative results obtained in complement fixation tests, microscopic examinations of faeces and autopsies. Evidence of liver fluke infection was not found in any animal either on faeces or *post-mortem* examination.

Pathological Findings

The only constant pathological changes noted were in the abomasa ot the animals examined.

Macroscopical Changes

While the pathological changes in most cases appeared to be present in both the fundic and pyloric areas of the abomasal mucosa, in the majority the former was the most severely affected.

The fundic mucosa, either in patches or in severe cases in its entirety, was thickened and granular. The degree of granularity was such that the appearance of the mucosal surface frequently resembled a mosaic of small cobblestones (Fig. 1) ; many ot these granular lesions appeared to have a small dark spot in their centres. The edges of the abomasal folds were often deep pink or dull red in colour and in several cases showed a number of small ulcers, each about 4 to 6 mm. in diameter and covered by a diphtheritic plaque. The lesions in the pyloric area were similar although against the normally pitted mucosa they did not appear so marked.

The sub-mucosa, particularly of the abomasal folds was often grossly oedematous. The lymph nodes adjacent to the abomasum were enlarged and hyperplastic in several cases.

Microscopical Changes

Fundus.—The granular appearance and the thickening of the mucosa are mainly due to 4 changes.

(1) The presence of numbers of nematodes in various stages of development in the gland lumina. In most of the abomasa examined these parasites are present in considerable numbers in each of the sections prepared from the fundus but in others they may be found only in a proportion of the sections. The nematodes are present singly or in groups containing a few individuals (Fig. 2). All stages of parasitic development as judged by size and structure appear to be present.

Fig. 3 shows a distended gland containing a young adult female identified by the presence of the ovijectors and vulvar flap (Fig. 4). Where a number ot nematodes or a single large nematode is present in an individual acinus the latter is distended ; the resulting displacement of the surrounding tissues is partly responsible for the corrugated appearance of the mucosa. While the epithelium of the affected acini is frequently flattened, absent, or hyperplastic there are usually no inflammatory cells around the worms. In the few exceptions the parasitised acini and surrounding stromal tissue are heavily infiltrated with polymorphonuclear cells in which eosinophils predominate (Fig. 5). Frequently large cyst-like acini which do not contain worms may be seen ; the diameter of these may be almost that of the entire thickness of the mucosa (Fig. 6). The epithelium of these acini may be hyperplastic and papilliform ingrowths are occasionally present.

It is not uncommon to find nematodes lying in the stroma of the mucosa ; again these appear to excite little inflammatory reaction. Fig. 7 shows the larval stage of a nematode lying partly in an acinus and partly in the supporting connective tissue.

(2) There is an increase in length of the fundic glands caused by hyperplasia of the mucous cells which line the gastric pits and form the superficial half of the gastric glands ; frequently the glands are also convoluted. Variation in the degree of lengthening of the glands contributes towards the irregularity of the mucosal thickening.

The appearance of the deeper parts of the mucosa is unlike that ot normal bovine fundus in which parietal and zymogen cells may be easily recognised ; in the affected stomachs parietal cells are present but it is usually difficult to find cells with the morphology and H. & E. staining characteristics of zymogen cells. The cells which are present rather resemble mucous cells. When sections of normal and affected bovine fundus are stained by the periodic acid-Schiff technique it is found that the cytoplasm of the zymogen cells in the normal fundus are rarely PAS positive ; the few cells which do react contain a small number of fine granules of positive material. In the affected fundi the cytoplasm of all the epithelial cells, excepting the parietal cells is usually strongly PAS positive. In the few cases where this is not so marked the majority of the cells contain positive granules. Examination of sections of normal and abnormal fundi stained with toluidin blue, Alcian blue and by the methylene blue extinction technique show that almost all the epithelial cells in the abnormal fundi contain acid mucopolysaccharide.

(3) There is considerable variation in the type and degree of cellular infiltrate in the interstitial tissue of the mucosa. Most commonly the stroma in the outer half of the mucosa is heavily infiltrated by plasma cells, lymphocytes and histiocytes. In several cases the infiltrate is composed almost entirely of neutrophils or eosinophils while the superficial mucosa is necrotic and covered by an acute inflammatory exudate ; many nematodes are present in the exudate (Fig. 8). In some of the cases a considerable amount of mucosal fibrosis is present.

(4) A final factor which is usually present and which contributes to the mucosal thickening is a degree of interstitial oedema which is particularly marked in the deeper parts of the mucosa. The sub-mucosa is frequently also very oedematous.

In addition to these changes ulcers are present in a number of the cases. These extend to the muscularis mucosa, are packed with polymorphs and frequently contain a number of worms. Finally the connective tissue on either side of the muscularis mucosa is often diffusely infiltrated by numbers of lymphocytes.

Pylorus.—The pyloric changes are usually milder than those in the fundus. Few worms are to be found in the acini and when present usually appear as single individuals. Cellular infiltration of the stroma is not marked while the appearance and staining reactions

of the epithelial cells in sections of abnormal and normal mucosa are similar.

Parasitological Findings

The numbers of worms recovered from the abomasal contents of each fatal case together with an estimate of the percentage of immature forms in these contents are shown in Table II.

TABLE II
RESULTS OF 13 AUTOPSIES FROM 8 OUTBREAKS

Number of worms	Per cent. Immature forms
22,000	0
161,000	14
95,000	—
90,000*	5
130,000	40
250,000	60
37,000	10
11,000*	50
39,000	2
54,000	—
219,000	—
104,000	50+
52,000*	20

* In these cases 50 per cent. of the infection was composed of *Trichostrongylus* sp.

In an attempt to obtain more information about the degree of correlation between the numbers of worms and the incidence and severity of the abomasal lesions described in these outbreaks, a number of visits were made to a knacker's yard in Ayrshire during April and May. A total of 30 abomasa from bovine animals which had died from unspecified causes were examined and the results recorded in Table III.

TABLE III
RESULTS FROM SAMPLE OF 30 ABOMASA EXAMINED

Number of worms	Total number of abomasa	Degree of change			
		Normal	Mild	Moderate	Severe
None	13	13	0	0	0
1–5,000	5	5	0	0	0
5,000–25,000	4	3	1	0	0
Over 25,000	8	0	0	4	4

Unfortunately it was not possible to determine whether the severely affected abomasa were from cattle which had shown clinical signs of ostertagiasis during life.

Discussion

In the outbreaks of severe chronic diarrhoea in young dairy cattle which have been described the only apparent abnormalities found at autopsy were the presence of large numbers of stomach worms, almost entirely *Ostertagia*, together with a marked degree of granularity of the abomasal mucosa. These findings, confined to the abomasum, are sufficient to account for the clinical signs as severe scouring is known to occur in heavy stomach worm infestations in cattle (Lapage, 1956).

For several reasons it also appears very probable that the large number of *Ostertagia* found in the abomasa were responsible for the mucosal lesions. First, there was a high degree of correlation between the extent and severity of the pathological changes and the numbers of worms found in each of the abomasa examined in the knacker's yard survey (Table III). Second, the gross appearance of the abomasal mucosa of these cases is similar to that described in *Ostertagia* infections of cattle by Bailey (1956) and, finally, both gross and microscopic appearances resemble those described by Sommerville (1954) as occurring in experimental *Ostertagia* infection in sheep.

If we make the reasonable assumption that the young cattle did not acquire their infestation from hay after being brought indoors (and in no case was any animal affected which had remained indoors during the grazing season) it follows that a striking feature common to all of these outbreaks was the delayed onset of clinical signs, *i.e.*, on the 8 farms where the young stock were brought in from pasture and housed, from 3 to 10 weeks elapsed before scouring and a subsequent severe loss of condition commenced. While in a few animals clinical signs did not become evident for as long as 5 months, this aspect of the history is one which is not normally associated with parasitic gastritis in cattle but on the contrary would tend to suggest a non-parasitic aetiology. In fact the condition might readily be confused with other causes of severe diarrhoea, for example Johne's disease or mucosal disease (Dow *et al.*, 1956).

In the absence of accurate information only obtainable from controlled experiments about the correlation between the pathogenesis, parasitology and symptomatology of bovine ostertagiasis it is not possible to do more than suggest the following tentative explanation for the delayed onset of clinical signs. It is probable that the scouring in ostertagiasis is caused by the worms or their associated lesions reaching a certain degree of development. Normally, therefore, one might expect the clinical signs to develop within 4 or 5 weeks after the ingestion of infective larvae as the prepatent period is usually considered to be 21 to 25 days (Bailey, 1956). In our fatal cases, however, a proportion of the *Ostertagia* recovered from the abomasal cavity were immature and this was usually associated with the presence of considerable numbers of developing forms in the mucosa as shown by the examination of stained sections. It is apparent, therefore, that inhibition of development occurred in a proportion of the infestation at least from all of these cases and it may have been this factor which by delaying the maturation of a large part of the infestation had produced an extended asymptomatic prepatent period. The purpose behind inhibited development, it is concluded by Taylor & Michel (1953), is to enable a parasite to maintain itself in an environment unsuited to development, for example in a resistant final host

FIG. 1.—Typical appearance of abomasal musoca in affected bovines.

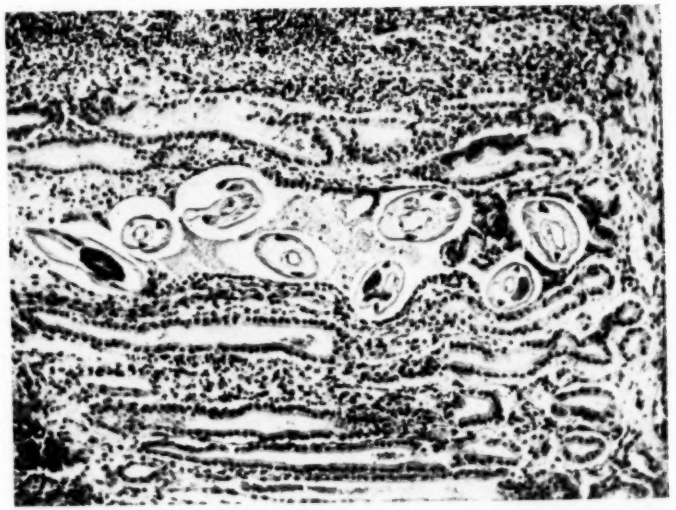

FIG. 2.—Nematodes developing in gastric mucosa x 120.

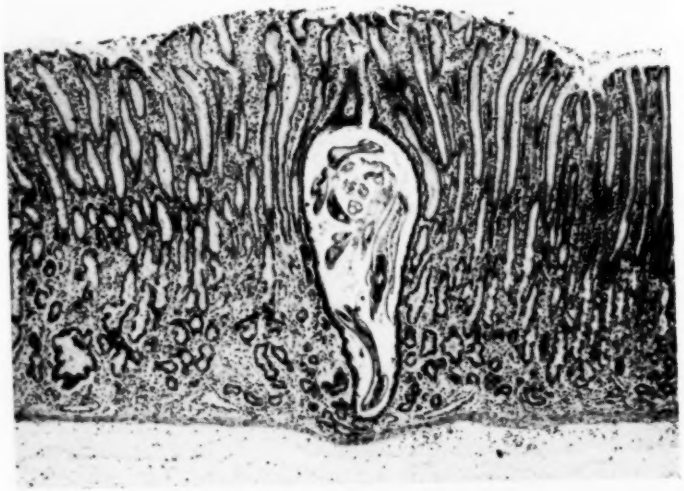

FIG. 3.—Distended gland containing young worms x 42.

FIG. 4.—H.P. view of FIG. 3, showing ovijectors and vulvar flap of young adult female x 140.

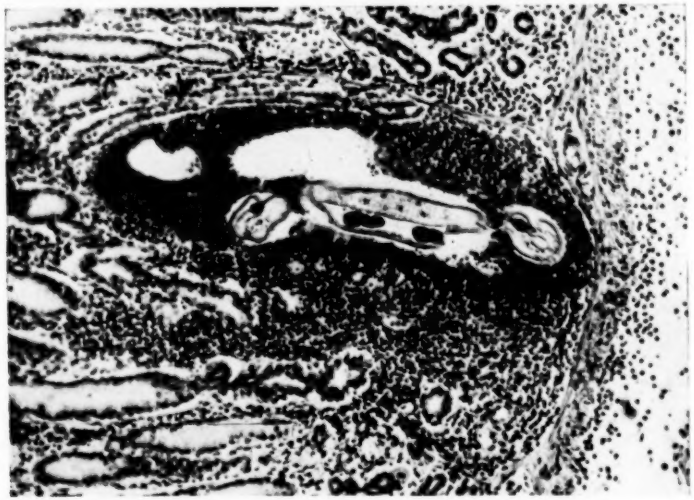

FIG. 5.—Young worms in suppurative focus in mucosa x 125.

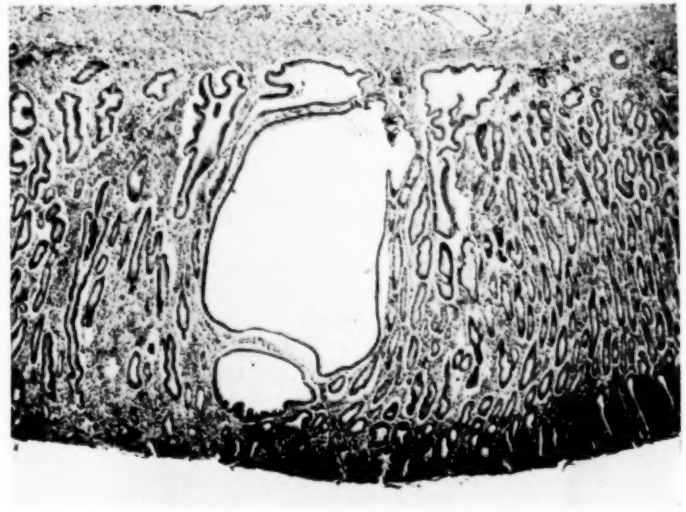

FIG. 6.—Cyst-like acinus x 38.

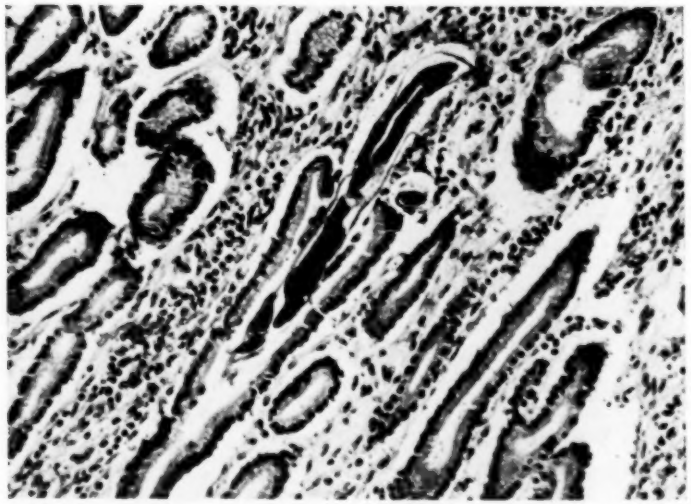

FIG. 7.—Larval nematode lying partly in gland lumen and partly in stroma x 165.

FIG. 8.—Superficial necrotising gastritis, note worms in exudate x 40.

until some depression of the host's state of resistance allows the larvae to grow to maturity.

An extended prepatent period has been described in experimentally produced *O. circumcincta* infestation in sheep by Sommerville (1954), who has demonstrated that larvae, developing from a single infection of 20,000 larvae, may remain in the abomasal mucosa for as long as 3 months from the date of infection. He also states that he has found both adults and larvae in the abomasa of sheep naturally infected in the field and not exposed to additional infestation for several weeks prior to slaughter.

Inhibition of development has also been demonstrated in *Dictyocaulus viviparus* infections of cattle in the field, in experimental infections of *D. filaria* in sheep (Taylor & Michel, 1952) and in *Trichonema* infections in horses (Gibson, 1953); in all of these cases it occurred as a manifestation of an acquired resistance due to previous infection. The cases of experimental ostertagiasis described by Sommerville are different in that inhibited development was a sequel of a single infection in previously worm-free sheep.

Some work in progress in this laboratory is of interest in this respect (Thomas & Urquhart, unpublished). Working with experimental infections of *Graphidium strigosum*, a stomach worm of rabbits, we have shown that the rate of development to maturity of a single infection depends on the number of larvae administered to the rabbit. When 5,000 larvae were administered in a single dose to a rabbit maintained under worm-free conditions the worms obtained at autopsy 7 weeks later were all mature and the average length of each worm was 15 mm. When the size of the infecting dose was increased to 350,000 larvae, only a small percentage of the resulting infection was mature after 7 weeks and the average size of the worms was 6 mm.

It is only possible to speculate on the possible cause of the inhibition observed in our cases of ostertagiasis in young cattle. It may have been due to an acquired immunity stimulated by infection during the early summer. Alternatively, the abnormally dry summer of 1955 may have delayed development to the infective stage of cumulative numbers of larvae on the pasture until late in the year; thus the calves may have ingested relatively large numbers of larvae within a short period of time immediately before being brought indoors for the winter. By analogy with the experimental results obtained with *G. strigosum* infection in rabbits, this in itself may have been sufficient to produce an extended prepatent period and therefore a delayed onset of clinical signs.

Some evidence was obtained that the condition described was not confined to the South and West of Scotland when, at the same time as this work was carried out, several reports of similar outbreaks accompanied by portions of abomasa identical to those encountered in our cases were received from veterinary surgeons in other parts of Scotland and in England.

Summary

(1) A description is given of a gastritis in young housed cattle associated with the presence in the abomasum of large numbers of nematodes mainly *Ostertagia ostertagi*.

(2) The main clinical features of the disease were severe chronic diarrhoea and emaciation, usually terminating fatally.

(3) The pathological changes, confined to the abomasum, were marked thickening and granularity of the mucosa. The histopathology of the lesion is described.

(4) A tentative explanation is given for the delay in the onset of the clinical signs.

Acknowledgments.—We wish to thank Messrs. A. T. Dickie, H. F. Downie, J. Garven, T. B. Newlands, A. E. Orr, D. B. Steel and C. Wood, MS.R.C.V.S. for their help in allowing us facilities to investigate these outbreaks, and to Mr. N. H. Hole, B.SC., M.R.C.V.S. for the complement fixation test results. For the photographs we are indebted to Mr. A. T. Finnie.

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PIGEON CLEARANCE IN LIVERPOOL

A new method of dealing with the increased pigeon population was tried out in Wallasey, Liverpool, last week. Between 40 and 60 lb. of grain, soaked in the narcotic chloralose, was spread as a bait, and about 10 minutes after eating it the pigeons began to lose consciousness.

A group of officials from the Ministry of Agriculture, Mr. W. T. Shallcross, M.R.C.V.S., and Mr. Richard Clitheroe, the Secretary of the Liverpool R.S.P.C.A., were present to note the effect of the narcotic and to collect the unconscious pigeons. Altogether over 200 were collected, put into baskets, and taken to Ministry laboratories and R.S.P.C.A. centres. There they will be kept under observation, and finally humanely destroyed.

One value in this method of reducing the pigeon population, as compared with others which have been tried, is that other birds recover, and are not destroyed as they would be by, for example, the laying of poison or indiscriminate shooting. Professor A. B. Semple, M.O.H. for Liverpool, said in his annual report that the immense crowds of pigeons in cities were a danger to public health. A current survey discovered symptoms of psittacosis in 56 out of 143 wild pigeons, and 2 human beings have recently been infected by homing pigeons.

News and Comment

FIRST NATIONAL PIG PROGENY TESTING STATION

Opening the first new National Pig Progeny Testing Station at Thorpe Willoughby, Yorkshire, on July 26th, the Minister of Agriculture, the Rt. Hon. D. Heathcoat Amory, M.P., said:—

"There is no doubt that our costs of production here are still much higher on the average than those in Denmark and Holland. I have no doubt at all that we can bring our costs here far more into line with those of our competitors. Our best pigs—and our most efficient producers—are just as good as theirs.

"Within a few days I hope we shall have the Royal Assent to the Agriculture Bill which will give us power to establish the Pig Industry Development Authority. We have lost no time in providing the industry with this Organisation which can put in hand a co-ordinated plan for the development of pig production. All sides of the industry have welcomed this opportunity of co-operating in a bold and vigorous programme of technical development.

"Three years ago we began to lay plans for nation-wide facilities for boar progeny testing. This has been a joint operation with all sides of the industry and the Government co-operating. To build 5 large modern testing stations would cost the substantial sum of £600,000. But pig producers agreed to provide this capital sum by deductions of 1d. a score from the subsidy payments. To run the stations would also cost money each year. The National Pig Breeders' Association and the bacon curers agreed to put up £27,000 for the first 3 years and the Government also decided to make a contribution. Now the first one is completed and ready for work. Those at Sealand (in Flintshire), Letchworth (in Hertfordshire), and Corsham (in Wiltshire) will come into operation later this year and the one at Bridge of Allan in Scotland next year. These stations will be the most modern boar progeny testing stations in Europe.

"The stations are at present leased to the National Pig Progeny Testing Board. That Board has done an able job in planning the buildings and designing the testing methods. There is nothing magical about progeny testing. The mere testing of boar progeny in itself achieves nothing. It is not an end in itself. What progeny testing will do is to give the industry knowledge of its best breeding stock; and so the power enormously to improve the quality and efficiency of our pig herds. Progeny testing is only one tool available to the industry. In itself it will not do the job. It must be closely linked to the National Recording Scheme, to the development of an accredited herd scheme, to the progress of artificial insemination, and to the accurate appraisal of consumer requirements."

VETERINARY STUDENTS IN EDINBURGH

The Royal (Dick) School of Veterinary Studies was host to 2 outstandingly successful veterinary students' meetings last month; the Association of Veterinary Students' Conference from July 13th to 15th, and the International Veterinary Students' Congress from July 10th to 21st.

The Association of Veterinary Students' Conference was attended by representatives from all the 7 Veterinary Faculties in the U.K and Eire. It was opened by Professor W. M. Mitchell, Director of Veterinary Education at the "Dick," who also delivered a lecture on osteoarthritis. After a tour of the School the 1st day ended with a dance. A bus tour to the Trossachs had been arranged for the next day, which ended with a Council Meeting at which Mr. M. R. M. Leslie, of Edinburgh, was elected President to succeed Mr. Eric Picking of Glasgow.

On the 3rd day the delegates toured the Edinburgh slaughter-houses and attended a show of veterinary films. The Association then held its Annual General Meeting, at which the President-elect expressed the hope that the next Conference would be held early next year. The proceedings closed with a cocktail party.

The International Veterinary Students' Union, which was meeting in this country for the first time, was attended by delegates from 17 countries. After the opening of the Congress by Professor Mitchell the delegates were welcomed by the Lord Provost at a Civic Reception in the City Chambers. The Hon. President of the Union, Mr. W. Percbloom, replied for the Union, and Herr A. Hempel presented the Lord Provost with a book from Justus Leibig University. The delegates were then escorted on a tour of Edinburgh, and in the evening attended a University Reception at which Professor Mitchell, Professor Robertson, and Professor Graham were also present.

Subsequent engagements of the Congress included visits to the Hannah Dairy Research Institute, the A.I. Station at Inchinnan, the B.O.C.M. Progeny Testing Station at South Cathkly, the Langhill and Bush Centre of Rural Economy, the Edinburgh Zoo, the Rowett Institute, and the Glasgow Veterinary College and Hospital. Professor Robertson delivered a lecture on foot-and-mouth disease in the U.K., and Professor J. G. Wright, Dean of the Faculty of Veterinary Science, University of Liverpool, lectured on Some Aspects of Fertility and Infertility in Dairy Cattle. Veterinary films were also shown.

THE U.S. BAR ASSOCIATION IN LONDON

The Registrar of the R.C.V.S., Mr. W. G. R. Oates, was invited to be a British member of the United States Bar Association conference in London. He took part in the session on professional discipline, a part of the Professional Activities section, under the chairmanship of Mr. Russell E. Booker, A.B., LL.B., of Richmond, Virginia.

NEW VETERINARY INVESTIGATION CENTRE OPENED

A pleasant ceremony took place at Aberystwyth on July 24th. The Earl St. Aldwyn, T.D., supported by a distinguished company, including Captain T. Herthewes, O.B.E., R.N. (Retd.), Lord Lieutenant of Cardigan, Sir Alan Hitchman, Mr. J. N. Ritchie, and Mr. J. Morgan Jones, Welsh Secretary to the Minister of Agriculture, opened the new Veterinary Investigation Centre. After a tour of the buildings, about 80 guests, including veterinary surgeons, farmers, and others, were entertained to tea.

THE BRITISH VETERINARY POULTRY ASSOCIATION

The 4th meeting of the British Veterinary Poultry Association was held at the School of Veterinary Medicine, Cambridge, on June 25th.

The President, Dr. R. F. Gordon, was in the chair and welcomed a good number of members to the Annual General Meeting which preceded the scientific session. The Secretary reviewed the progress of the Association during its 1st year of existence. Three meetings had been held; these were well attended and provided a useful forum for both formal and informal discussions. Membership was 61, consisting of 58 members and 3 associate members. Dr. A. Buxton, Treasurer, presented his report which showed a credit balance of over £32. With a minor amendment the constitution agreed at the meeting at Weybridge last year was accepted and Mr. J. M. S. Lucas was elected to the committee in place of Dr. Barron who retired by ballot.

A paper on "The Incidence of Intestinal-type Bacteria in the Egg and their Effect on Hatchability and Chick Mortality," presented by Mr. E. G. Harry, elicited a good discussion. In the afternoon there were conducted tours of the Veterinary School and demonstrations on Pathology and Parasitology of Wild Birds by Mr. A. R. Jennings, and Respiratory Diseases of the Fowl by Dr. H. P. Chu.

On the evening preceding the meeting, members who had arrived at Cambridge were the guests of Dr. H. P. Chu at a barbecue, and on the following evening there was an informal dinner at the University Arms Hotel at which members were the guests of the Directors of Agricultural Food Products and British Oil and Cake Mills.

HOLIDAY VISIT TO U.K.

A German veterinary student would appreciate an opportunity of seeing practice with an English or Scottish veterinary surgeon between August 15th and mid-October of this year. He has visited England on 3 previous occasions and speaks English fairly well.

Any member who may be able to help is asked to write to the General Secretary, B.V.A., 7, Mansfield Street London, W.1. The student is Mr. Hermann-Josef Heydemann, Bandstr. 4iii, München, 23.

UNIVERSITY NEWS

Bristol

Dr. J. A. Laing has been granted leave of absence for 1 year to take up a post with the Food and Agriculture Organisation of the United Nations.

Edinburgh

The University Court of the University of Edinburgh has accepted the unanimous recommendation of the Board of Veterinary Studies transmitted with the approval of the Faculty of Medicine, that Professor A. Robertson be appointed Director of the Royal (Dick) School of Veterinary Studies in succession to Professor W. M. Mitchell as from October 1st, 1957.

Professor W. M. Mitchell, whose retirement in the coming autumn from the post of Director of Veterinary Education, Royal (Dick) School of Veterinary Studies was announced in this journal on January 26th, has had conferred upon him the title of professor emeritus, from the University of Edinburgh.

The Royal (Dick) School of Veterinary Studies Alumnus Association will hold its Annual General Meeting and Dinner during the Congress in the Dorothy Café Restaurant, 20-24, Sydney Street, Cambridge, on August 29th at 7.30 p.m. for dinner at 8 p.m.

PERSONAL

Births

CARR.—On July 25th, 1957, to Gladys, wife of Walter H. Carr, B.V.SC., M.R.C.V.S., of Leicester, a son—Peter John Gilbert.

HARLEY.—On July 20th, 1957, to Jill, wife of Peter J. Harley, M.R.C.V.S., at April Cottage, The Fairway, Devizes, Wilts, a second son.

TRAYNOR.—On July 19th, 1957, to Heather, wife of Derek K. Traynor, M.R.C.V.S., of East Lane, Wembley, a daughter, Susan Jane.

COMING EVENTS

August

8th (Thurs.). Extra Meeting of the Dumfries and Galloway Division at the New Auction Mart, Lockerbie, 2.15 p.m.

25th-31st. 75th Annual General Meeting and Congress of the B.V.A. at Cambridge.

ADDRESSES OF DISEASE INFECTED PREMISES

The list given below indicates, first the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Anthrax

Berks. College Farm, East Garston, Newbury (July 27).
Essex. Kiln Farm, Barnston, Dunmow (July 23).

Atrophic Rhinitis

Hereford. Ox House, Shobdon, Leominster (July 26).

Fowl Pest

Lancs. Ellerslie Farm, Longton; Grange Farm, Barton (July 23); Park Lane, Forton (July 24); 11, Devonshire Road, Southport (July 25); The Bungalow, Smithy Lane, Much Hoole (July 26); Higher Crookhey Farm, Cockerham; Tunsteads, Shirley Lane, Longton (July 27); Fairfield, Marsh Lane, Longton (July 28).
Norfolk. The Lings, North Elmham, East Dereham (July 23).

Swine Fever

Berks. Brook Farm, Martins Lane, Bracknell (July 26).
Bucks. Moor Farm, Lane End, Frieth, Henley-on-Thames (July 25).
Hants. Manor Farm, Burley, Ringwood (July 24).
London. 182, Ancona Road, Plumstead, S.E.18 (July 26).
Middx. Duppas Farm, Lower Halliford, Shepperton (July 26).
Oxford. New Farm Buildings, Black Bourton (July 24); Manor Farm, Cleveley, Enstone (July 26).
Somerset. Batch Farm, Sutton Ditcheat, Shepton Mallet (July 23).
Surrey. Bishopsgate Lodge, Ockham Road South, East Horsley (July 26).
Warwicks. 57 Blythsford Road, Hall Green, Birmingham, 32 (July 26).
Wilts. Broad Street, Beechingstoke, Devizes (July 25).
Worcs. New House Farm, Romsley, Bromsgrove (July 24).
Yorks. Storths Farm, Birkby, Huddersfield (July 23).

FOOT-AND-MOUTH DISEASE

The areas described in the schedules below are declared to be Infected Areas for the purpose of preventing the spread of foot-and-mouth disease :—

IN THE COUNTY OF WILTS

The Boroughs of Marlborough and Swindon.
The Petty Sessional Division of Swindon.

In the Petty Sessional Division of Cricklade: The parish of Broad Town and so much of the parishes of Wootton Bassett, Lydiard Tregoze, Lydiard Millicent and Purton as lies to the east of the road running from Broad Town *via* Wootton Bassett and Purton to Cricklade, including the said road.

In the Petty Sessional Division of Marlborough: The parishes of Broad Hinton, Winterbourne Bassett, Berwick Bassett, Winterbourne Monkton, Fyfield, Preschute, Ogbourne St. Andrew, Ogbourne St. George, Mildenhall, Aldbourne, Baydon, Chilton Foliat, Ramsbury, Froxfield and Little Bedwyn and so much of the parish of Savernake as lies to the north of the railway running from Marlborough to Hungerford, excluding the said railway.

IN THE COUNTY OF BERKS

The Petty Sessional Division of Lambourn.

In the Petty Sessional Division of Hungerford: So much of the parish of Hungerford as lies to the north and west of the main road (A.338) running from Shalbourne *via* Hungerford to Great Shefford, including the said road.

In the Petty Sessional Division of Newbury: The parish of West Shefford.

In the Petty Sessional Division of Wantage: The parishes of Sparsholt, Childrey, West Challow, Letcombe Bassett, Letcombe Regis and Fawley.

In the Petty Sessional Division of Faringdon: The parishes of Buscot, Coleshill, Watchfield, Shrivenham, Bourton, Great Coxwell, Little Coxwell, Longcot, Fernham, Shellingford, Baulking, Kingston Lisle, Uffington, Woolstone, Compton Beauchamp and Ashbury.

IN THE COUNTY OF SOMERSET

The Boroughs of Glastonbury and Wells.
The Petty Sessional Divisions of Frome, Kilmersdon and Shepton Mallet.

In the Petty Sessional Division of Weston: The parishes of Hinton Charterhouse, Wellow, Combe Hay, Englishcombe, Dunkerton, Camerton, Peasedown St. John and Shoscombe.

In the Petty Sessional Division of Keynsham: The parishes of Priston and Marksbury and so much of the parish of Compton Dando as lies to the south of the road running from Corston *via* Compton Dando to Publow, including the said road.

In the Petty Sessional Division of Temple Cloud: The parishes of Ubley, Compton Martin, West Harptree, East Harptree, Litton, Hinton Blewett, Ston Easton, Farrington Gurney, Paulton, High Littleton, Timsbury, Farmborough, Clutton, Cameley, Chelwood, Publow, Stanton Drew, Norton Malreward, Chew Magna, Chew Stoke and Stowey-Sutton.

In the Petty Sessional Division of Axbridge: The parish of Blagdon.

In the Petty Sessional Division of Wells City and County: The parishes of Priddy, Westbury, St. Cuthbert Out, Dinder, North Wootton, Chewton Mendip, West Pennard, Baltonsborough and Wookey and so much of the parish of Rodney Stoke as lies to the north and east of the main road (A.371) running from Cheddar to Westbury including the said road.

In the Petty Sessional Division of Wincanton: The parishes of Brewham, Bruton and Ansford and so much of the parish of Pitcombe as lies to the north of the main road running from Shepton Montague to Sparkford excluding the said road.

The area described in the schedule below shall cease to be an Infected Area for the purpose of preventing the spread of foot-and-mouth disease on August 5th, 1957 :—

IN THE COUNTY OF DEVON

The Borough of Totnes.
The Petty Sessional Division of Totnes.

In the Petty Sessional Division of Plympton: The parishes of Shaugh Prior, Cornwood, Harford, Ivybridge and Ugborough.

In the Petty Sessional Division of Tavistock: The parishes of Lydford, Peter Tavy, Marytavy, Whitchurch, Sampford Spiney, Horrabridge, Buckland Monachorum, Walkhampton, Meavy and Sheepstor.

In the Petty Sessional Division of Hatherleigh: The parishes of Gidleigh, Throwleigh and Bridestowe and Sourton Common and so much of the parishes of South Tawton, Belstone, Okehampton Hamlets and Sourton as lies to the south

and east of the main road (A.30) running from Exeter *via* Okehampton to Bridestowe, excluding the said road.

In the Petty Sessional Division of Crockernwell: The parishes of Chagford, North Bovey and Manaton.

In the Petty Sessional Division of Teignbridge: The parishes of Widecombe in the Moor, Buckland in the Moor, Ashburton, Holne, West Buckfastleigh, East Buckfastleigh and Dean Prior.

In the Petty Sessional Division of Dartmouth: So much of the parish of Blackawton as lies to the north and west of the road running from Dittisham *via* Blackawton and Millcombe to East Allington, excluding the said road.

In the Petty Sessional Division of Kingsbridge: The parish of Loddiswell, so much of the parishes of East Allington and Woodleigh as lies to the north of the road running from Millcombe *via* East Allington to Churchstow, excluding the said road, and so much of the parishes of Averton Gifford and Modbury as lies to the north and east of the main road (A.379) running from Kingsbridge to Yealmpton, excluding the said road.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

Historic Veterinary Surgery

Sir,—Turbervile's "Noble Art of Venerie or Hunting" which was published in the mid-1500's very naturally contains at the end of it a number of "receipts to heale sundrie diseases and infirmities in houndes and dogges" which mostly concern themselves with "how to make a dogge to pisse" or combating the "Rewmatique or Slavering madnesse" with an optimistic combination of fennel and mistletoe.

On the surgical side, however, the teaching is very much better; here an account of how to extirpate some sort of neoplasm complete with the ligation of the adjacent vessels is followed by instructions as to how to deal with penetrating wounds of the abdomen such as might be sustained in boar or bear hunting and which contains the following: "If the guts fall out and yet the guts be not broken or pierced, let the varlets of the kennell take the dogge quickly and put up his guts softly into his bellie with the ends of his fingers in such sort as a gelder doth when he spayeth a bytch," after which closure of the wound by a series of interrupted sutures is recommended.

I must admit I had no idea that the spaying of bitches by abdominal incision went back as far as this. It would appear from this that our forebears, the gelders and varlets of the kennel, possessed a very considerable store of surgical know-how which, as far as the animals of the chase were concerned, must have gone back into the remote ages.

Yours faithfully,

R. H. A. MERLEN.

Royal Veterinary College,
Royal College Street,
London, N.W.1.
July 24th, 1957.

Should We Investigate "The Box"?

Sir,—Quite an amount of correspondence has appeared in THE RECORD recently on the merits and de-merits of the 2-way radio telephone in veterinary practice. It would appear that it has its uses, and the economy of installing it is a matter for individual practitioners to decide for themselves. May I call your attention, however, to another device which, whatever its merits or de-merits, certainly does not work for the good of the veterinary profession generally. I refer to the device known as the "box." For anyone who has not heard of this contrivance (and it must be miraculous!) it is alleged to work as follows: Should a human being or an animal be indisposed, whatever the cause, all that is required is to send a drop of blood or a hair from the patient to the person in charge of the "box," and in due time a report will come back indicating the nature of the disease and its prognosis. I understand, by putting the apparatus into "reverse gear," it effects a cure.

Let me give one or two instances of what I have heard in recent months. Many others among your readers will already have heard such reports. All my evidence is hearsay.

A wealthy owner had a stallion going to a show. A short time before the date of the show the horse sprained a tendon, and the usual cardinal signs of inflammation made their appearance. The groom in charge busied himself with hot fomentations as often as he could manage to apply them, working a lot of overtime in his endeavour to get the stallion fit for the show. Imagine the groom's feelings when the owner informed him a few days before the show that the animal would be fit because a hair from its mane or tail had been sent to the "box" and a favourable report had been received.

I heard of another case this week. An owner had dispatched some material from his horse to the "box" and a report came back to the effect that the animal was suffering from a worm in the kidney but there was no need to worry because it would pass.

Not long ago I even heard it alleged that a veterinary surgeon, who was presented with a dead chicken for his opinion *post mortem*, had access to the "box" and took a feather from the deceased fowl and submitted it to the genie. He became at once possessed of information which enabled him to rush to the place of origin, inject the remainder of the fowls, and thereby save their lives.

These and similar stories are being accepted every day, not by the poor and ignorant, but by wealthy and well-educated people.

Is it not time, Sir, that some authoritative body such as the B.V.A. carried out an investigation and let us have the benefit of their report? Then we should know how to answer these people whose talk savours so much of witchcraft and the dark ages. Alternatively, we might even procure a "box" for ourselves. All the general practitioner can do about

it at the moment, when challenged, is to laugh; but that is not enough.

Yours faithfully,
H. BELL.

65-67, Grenfell Road,
Maidenhead,
Berks.

July 23rd, 1957.

Docking in 1899

Sir,—Ted the yardman surveyed appraisingly the 4½-month-old terrier-type pup, tailed like a pointer, which I had brought to him, and spoke: "Ah! That'll take some chawing off, that will." Then, without haste or hesitation, he tucked the pup under one arm, back to front, "chawed it off," put the pup down, spat once, and all was satisfactorily completed.

After-treatment was left to the patient, which after a brief expression of pained surprise seemed satisfied that things were no worse, and quickly settled down to normal.

The operation was completely successful. I can't quite remember about the fee, but I fancy the job was done mostly for the love of the thing.

Yours faithfully,

ESMOND BROWN.

Lan House,
Weston Road,
Bath.

July 21st, 1957.

"Large-animal Colleagues"

Sir,—If it be true that coming events cast their shadows before, we have, in last week's RECORD, a glimpse into a future which is apparently already with us.

Large-animal colleagues—shades of George Orwell! One can visualise Mr. Straiton at his desk, surrounded by his large-animal colleagues. Ferdinand is there, ruminating upon the tests and trials of his bovine world. Basil the Boar grunts assent to some profound observation by his large-animal colleague, Billy the Goat. Slumped in his chair, Roger the Ram meditates upon the comparative merits of hormones, aphrodisiacs, and other vim-restoring pharmaceuticals.

And there in the midst sits the Principal of the Practice, his fingers on the pulse; at his elbow his secretary (is she large- or small-animal?), her ear glued to the V.H.F.; while outside, the fleet of cars (or floats, as the case may be) ticks over in readiness, their loins girded and their lights burning.

The more I dwell on the scene the more I regret that I was born 10 or 20 years too soon. But there is little I can do about it now, even in this age of P.M.S., P.M.D., P.R.D., and L.S.D. *O si praeteritos referat mihi jupiter annos.*

And, since the cash question has so obviously dominated this correspondence, will you allow me, Sir, to remain in keeping with the general tone by signing myself,

Yours faithfully,
"THIRTY-FIVER."

The Bungalow,
Oldmeldrum Road,
Newmachar,
Aberdeenshire.

July 18th, 1957.

Two-Way Radio Telephones

Sir,—Good for Mr. Straiton! Once more he has made his critics appear to be such 'little men." His writings are down to earth and full of real common sense. A breath of fresh air after some of the rubbish that has appeared in THE RECORD.

Mr. Straiton obviously likes working—not just hard, but very hard. His critics are so obviously lesser men and are jealous of him. Why not admit that they have neither the energy nor the ability to work as hard themselves?

Carry on with your good work and your good writings, Mr. Straiton. A pity there are not more like you.

Yours faithfully,
ROBERT S. TOWNSON.

Kelperland,
Bray,
Maidenhead.

July 27th, 1957.

Sir,—No one would expect anything so complicated as a radio telephone to be for ever free of faults; breakdowns are a nuisance, but intermittent faults are a menace. A set with vibrator failure may function only sometimes, and it may be some little while before a fault is suspected! Meantime, of course, the operator at the base becomes more and more exasperated calling a car which seldom answers.

To guard against a set being left switched off, and also to guard against the suspicion of a set being left switched off when it is in fact not functioning or out of range, the obvious solution is to use the car ignition switch to turn on the set, so that the radio is turned on and off with the engine. For those occasions when one wishes to leave the R/T on while the engine is not in use it would be a simple matter to install a secondary independent switch preferably with warning light. In this context it is as well to remember that one's battery has a limited capacity on which lights, wiper, starter and heater already place heavy demands in winter. How many when considering the financial aspect of installing R/T even consider installing a heavy duty dynamo and extra battery capacity?

Radio telephone certainly helps a principal to know more about the hour by hour happenings in his practice, but even this facility is not as great as it might be since the base transmitter operates on one wavelength and those in the cars on another. Hence not only is it impossible for the principal in his car to hear more than one side of a conversation, it is

also impossible for him to speak by radio from his car direct to an assistant in another car.

Yours faithfully,
K. D. PARKINSON.

Overdale,
Cragg Wood Drive,
Rawdon, Nr. Leeds.
July 20th, 1957.

Sir,—The recent discussion in THE RECORD regarding radio-telephone installations should make some of us realise how lucky we are. The benefit of the radio-telephone to Mr. Straiton must be obvious from his letter of July 8th, since it appears that his first large-animal colleague, second large-animal colleague, third large-animal colleague, and presumably the driver of his small-animal car are only allowed to attend calls after instructions from Mr. Straiton.

Surely these persons are qualified; but if so, why, oh why must they be allowed no initiative—for that is implied? How frustrating for them. And can Mr. Straiton's secretary find time for anything but receiving calls and retransmitting them under this system?

I cannot believe that Mr. Straiton's practice is in such poor health as to require a finger on its pulse the whole time.

Yours faithfully,
A. V. CLARKE.

The Hermitage,
Crewkerne, Somerset.
July 20th, 1957.

Sir,—Mr. Straiton, in his original notes extolling the virtues of the radio telephone, told us that he often appears in the yard almost as soon as the farmer has put his telephone down. It is not questioning his good faith, whether from motives of jealousy or otherwise, to suggest that he is emphasising his claims by exaggeration. Either that, or his clients fiddle about with their receivers for a remarkably long time before they replace them.

Is it really so outrageous to feel that Mr. Straiton tends to colour his remarks with similar exaggerations whether he is referring to car mileages, his former eating habits, or the salary he thinks assistants should be paid?

Yours faithfully,
P. J. DINGLE.

East Rudham,
King's Lynn,
Norfolk.
July 27th, 1957.

Sir,—As I worked with Mr. E. C. Straiton in Stafford from August, 1946, until October, 1948, I may be considered competent to pass an opinion on his comments in THE RECORD lately. His claims are rather fantastic, but it must be pointed out that Straiton himself is fantastic, and I for one accept his figures without reserve. Perhaps the correspondent who classified himself with lesser mortals was not so far wrong.

I remember Eddie Straiton's 4-year-old daughter enquiring of her mother, "Who was that man, mummy?" when her father called in at the house one day when she was awake. I could continue with several examples in like vein.

Straiton is a veterinary surgeon whose ability and service are held in high regard by his clients and also by those members of the profession who have worked with him. His statements have every right to be challenged, but ridicule and cheap sarcasm are quite undeserved.

Yours faithfully,
A. MORTON.

Brook House,
Framlingham,
Woodbridge,
Suffolk.

July 27th, 1957.

Sir,—In all humility, and with unbounded respect for the contestants in your motoring tournament, I submit for your consideration a snatch of doggerel:—

I have travelled with wrapt admiration
This brief controversial path,
And have marvelled at how
A mere ninety-six "thou"
Have provoked such a welter of wrath;
But the one thing that really perplexes,
Surpassing my limited ken,
Is how such a witless and obvious pun
Could have flowed from so lofty a pen.

Yours faithfully,
A. H. HARRIS.

12a, The Grove,
Horsell,
Woking.

July 27th, 1957.

Sir,—May I suggest that Mr. Straiton uses a helicopter on his annual marathon? To improve the efficiency of his practice he can even instal 2-way television in order to play dominoes with his clients from the plane whilst the cows are calving.

Yours faithfully,
M. SACHS.

617, Scott Hall Road,
Leeds, 17.

July 22nd, 1957.

Sir,—Oft is it said that half the world doesn't know how the other half lives, but only now do I realise how abysmal is my ignorance of the veterinary other half. Incredulously I learned of 96,000 miles travelled in a year (a leap year no doubt), pityingly

I read of "a 10-minute breakfast at 5.45 and a 20-minute meal any time between 11 p.m. and 4 a.m. next morning." I take it Mr. Straiton is bearded; for who would waste time shaving with so much more important things awaiting him? "Several years of absolute slavery to veterinary science to look back on"—yes, I started and built up my practice in the early '30s, which speaks for itself; but why, Mr. Straiton, continue and revel in "absolute slavery"?

A radio telephone has its uses, and why shouldn't one be installed; but I fail to see why 5 or 6 telephone calls were required to contact each colleague, if the clerk had their itinerary: unless they were "tripping hither, tripping thither, nobody knows why or whither."

I was taught in early youth that man's chief end was to glorify God and enjoy Him for ever. The "enjoyment for ever" betokens, I have always thought, a striving after the full, balanced life. Mr. Straiton, I presume, is a bachelor, unhindered in his hurried progress towards the grave by the care and upbringing of children. I take it he indulges not in concert going, sport of any kind, service on local committees, or community work of a non-professional kind.

With 30 minutes only for his breakfast and nocturnal feast, how could he be expected to stand and stare at a sunburst or concern himself with anything outside his so overriding profession? Let the rest of the world go by, indeed. I have seen too many veterinary surgeons fall under their burdens in their late 40s or early 50s; and the places thereof know them no more. The biggest practice is no use to a corpse.

For the leviathan of labour there is of course the inward satisfaction of paying sur-tax; of forfeiting 50 per cent. of a hard-earned 20 shillings to a grasping government: consoling thought!

Yours faithfully,
N. F. POLLOCK.

Long Planting,
West Runton,
Cromer, Norfolk.
July 29th, 1957

P.S. I suppose Mr. Straiton's clients, impressed by his prompt ubique, pay their bills now by express letter.

Sir,—There are fairies at the bottom of my garden.

Yours faithfully,
J. DAVID COPLEY.

18a, Spring Crescent,
Portswood,
Southampton.
July 28th, 1957.

A Scale of Professional Fees

Sir,—I support Mr. Straiton wholeheartedly in his desire for a scale of fees; unfortunately it would be difficult to enforce.

It is a fact that many practitioners are charging less than tradesmen, and certainly less than a taximan—and many assistants are working per hour for less than a farm labourer. It is most disturbing that a professional man, who will charge £2 2s. for a distemper vaccination, will spay a cat for £1 1s. Many such anomalies exist. Few, if any, of us have kept our fees in line with present-day values.

The B.V.A. should emulate the Law Society, which has a scale of fees related to the cost of living. If it could not be enforced, at least it would act as a guide to those of us who would rather speak of our "neighbours" than our "opposition."

Yours faithfully,
M. BERWYN-JONES.

52, Friars Street,
Sudbury,
Suffolk.

July 28th, 1957.

Sir,—I wish to support everything Mr. Straiton has said in the latter part of his letter regarding the production of a realistic scale of fees for the profession. In this matter we appear to lag dangerously behind the other learned professions.

It is surprising that the B.V.A. are ready to negotiate fees for official duties, but are so reticent in arranging a scale of fees for private work. If the B.V.A. are in any doubt on this matter let them hold an immediate referendum on the subject addressed to all members in private practice.

Yours faithfully,
J. A. TOOVEY.

Church House,
St. Neots,
Hunts.

July 28th, 1957.

Sir,—I would like to congratulate Mr. E. C. Straiton on his suggestion for the production of a standard scale of veterinary fees. If this were produced along the lines suggested by him, it would indeed raise our profession from the bargain basement.

As a young veterinarian I have often been accused of inexperience in these matters, but one has not to be middle-aged to grasp the fundamental economics of living.

It is largely up to the younger members of the profession to raise its status to a rightful position. The sooner a united effort is made to follow the not unreasonable suggestions made by Mr. Straiton, the sooner will the public realise our true value.

Yours faithfully,
DOUGLAS H. PHILLIPS.

20, Cardiff Road,
Aberdare,
Glam.

July 28th, 1957.

Sir,—Mr. Straiton has emphasised, in his latest letter, the question of economics in veterinary practice. Several years ago, in another context, THE VETERINARY RECORD invited veterinary surgeons in practice to submit to the Editor figures indicating

the gross turnover of the practice stated as a percentage figure of the 1938 result, and also the percentage of profit on each year's gross turnover. I have found since that date that such figures are most informative to those who are interested in the subject of economics.

If Mr. Straiton had so wished he could easily have proved the economy of the radio telephone by indicating that following its introduction his percentage of profit on gross turnover rose or remained static: Even the latter result would be quite an achievement in these days.

I would like to take this opportunity to point out to Mr. Straiton that the years from 1939 onwards were years of uninterrupted expansion in agriculture —and therefore in veterinary practice. Those of us who escaped war service were glad to get on with the job in hand and I think we all became familiar with the 16-hour day—yes, even in father and son practices.

I think Mr. Straiton is a little illogical when he threatens his critics with a repetition of the 16-hour day. If, as he suggests (and I am not disposed to contradict him at this stage), agriculture falls on hard times we in practice will see a return not of the 1940s which were great, busy, formative years, but a return of the 1930s which were poor, hard, bleak days when practitioners were under-employed and would have welcomed a 16-hour day.

Again, I think Mr. Straiton is illogical when he calls for a readustment of fees in an upward direction. The profit margin in agriculture is narrowing. Already I have observed a hesitance in calls for professional aid from the less prosperous classes of farmers. If fees are to be raised matters will get worse not better.

Yours faithfully,
J. P. PICKERING.

Orchard House,
Priestpopple,
Hexham, Northumberland.

July 28th, 1957

Sir,—Mr. Straiton's remarks on the subject of veterinary surgeons' incomes are of far greater importance to the profession than the controversy over his 96,000 miles in a year. In the same issue of THE VETERINARY RECORD there appear (a) a list of 127 new members of the profession, and (b) 52 advertisements for assistants in the Appointments Vacant column. On the face of it each assistantship could be filled 1½ times and still leave a generous number of new members for teaching, the Colonial Service, the Ministry and so on. It will be interesting to see how the Appointments Vacant column shrinks during the coming month or two. If it does not materially do so then the conclusion must be that either the total number of assistantships throughout the country as a whole is rapidly increasing, or that practice, for some reason, is not popular.

The recent publication of a draft legal contract between principal and assistant would indicate that the B.V.A. is not unmindful of some of the possible causes of this alleged reluctance of members of the profession to enter practice. At a time when Trades Unions are regularly demanding (and getting) better and better conditions for their members it may be that "dedication" to the profession is no longer an acceptable substitute for good conditions and remuneration.

Yours faithfully,
H. B. LUXMOORE.

Lansdowne House,
16, North Shore Road,
Skegness, Lincs.
July 28th, 1957

Sir,—I was very pleased to read Mr. Straiton's letter in this week's RECORD. I must confess that I had formed the uncharitable opinion that he must be doing a great deal of work for very small fees in order to build up such an immense practice. I am very glad that I was wrong. I fully agree that it is time that the "powers that be" should take up the matter of fees. I understand that several Divisions of the B.V.A. have gentlemen's agreements but I do not know how they work out. I feel that the 3s. 6d. dehorning practitioners must be quite unaffected.

For many years we all have been made familiar with various "arch crimes," professionally speaking, to which the R.C.V.S. has been obliged to address itself.

The perpetrators are disciplined; yet the more objectionable undercutting-competitor is left scot-free to terrorise his neighbours for a radius of 50 miles or more. Who lowers the status of his profession the more?

I feel that if there are to be any investigations into veterinary incomes, investigators should not leave out those members who have retired, and also widows and orphans. Remember the fate of those members who were not able to afford the new R.C.V.S. fees after retirement.

I have no doubt that there will be a lot of clap-trap about conditions varying in different parts of the country. My reply is quite simple. Petrol, drugs, cars, school fees, etc., cost the same in nearly all parts of the country. The Chancellor of the Exchequer takes no account of territorial divisions. The prices of farm products are nearly all standardised, and so are agricultural wages. The comments of a local branch of the N.F.U. when told that they must accept less per pig if marketing 20 at a time than if, say, only 10 were sent in, would be worth listening to. Yet how often are these conditions imposed on us?

How are scales of fees to be enforced? Quite easily. Examine the ratio of turnover and profit as prepared for taxation purposes: any marked departure from normal would have to be explained. I say to all those who trouble to read this letter: remember, you, too, may be forced to retire one day.

Yours faithfully,
JOHN G. P. WOOD.

Moorcroft,
Reepham,
Nr. Norwich.
July 28th, 1957.

Sir,—Congratulations to Mr. Straiton, surely the First Veterinary Citizen of the Supersonic Age, on enlivening your columns in the last few months with the apparent paradox of his "leisure" approach to obstetrics worthy of William Henry Davies, and the latest revelation of his super-human efforts in the immortal "96,000" year.

Having revolutionised our approach to obstetrics and the economics of practice with a few deft strokes, he now turns to the wider canvas of the profession in general. We learn that, with a singular exception, we are a lazy, jealous, miserly (regarding assistants), complacent, fee-cutting lot but, happily, the remedies to restore our prestige are appended to the indictment.

While I appreciate that supermen exist occasionally in every walk of life, may I suggest that the prestige of the profession is being upheld satisfactorily by the majority of average practitioners of my acquaintance who regard 20,000 to 30,000 miles per annum as the optimum mileage consistent with giving each and every case the attention it requires? While Mr. Straiton's 96,000 miles form a remarkable record of sheer endurance, it is difficult to appreciate how accurate diagnosis, treatment, etc., can be essayed in the 40 to 50 visits each and every 250- to 300-mile day must involve.

However, we may all be wrong and Mr. Straiton right.

Some years ago, Mr. Esmond Brown regaled your columns with the illustrative story of a matron who, if one of her nurses appeared out of sorts, administered a dose of salts, but, if all the nurses appeared out of sorts, took one herself.

If Mr. Straiton really believes the profession is in such a sorry state, I would suggest he studies this parable and applies the appropriate remedy. This may, of course, result in even greater speeds.

Yours faithfully,
B. D. BASSETT.

Long Copse,
Shaftesbury,
Dorset.

July 29th, 1957.

Sir,—The controversy now in full flood on the merits of slavery and mileage is of minor importance. What is important is the question of fees and salaries.

At the outset I must state that in my view it is only those engaged in practice who can begin to understand how necessary it is to present a united effort and reach an agreed standard of fees. Any veterinary surgeon in practice can recite a list of anomalies regarding fees charged and the price some members of the public expect to pay for veterinary services: for example, an insurance company expects a horse valued at £500 to be examined by a veterinary surgeon for 17s. 6d.

The public tends to accept any veterinary surgeon at his own valuation. If he charges low fees to gain clients in the course of time he will be accepted as "cheap" in all meanings of the word.

What is to be done? Something, and quickly! I suggest that an organisation consisting mainly of practitioners be set up, possibly on the following lines:—

Each county to be represented by two veterinarians, one from the north and one from the south. Counties to be joined into groups of three. Next join the county groups into zones of three. Each county group should elect one member to go forward to zone, and each zone should elect one member to go forward to headquarters. The headquarters representatives should form a committee presided over by the President of B.V.A. plus a representative from the Ministry staff, a representative from the colleges and a representative from corporations and private concerns like the Milk Marketing Board. Thus a committee consisting of about 10 to 12 people would be formed, truly representative, and comprising a solid body of informed opinion.

Meetings and talk are of no avail unless some action is taken, and that must depend on the type of men chosen to represent their colleagues. There are no fruits in apathy, and the excuse of "I haven't time" must stop. Time must be found.

We must be represented at the highest level by active men who know their subject and who worry about things like fees and salaries. They will have to face strong groups in organised agriculture, pharmacy, drug manufacture, and other pressure groups not only at national level, but in the not too distant future at European level. It is imperative that our representatives know the feeling of the profession, what its members want, and what policy is to be pursued.

Some veterinary surgeons, of course, can command, and obtain, higher fees than others, but there must be a standard fee below which we must not go. A guide should be formulated about once yearly showing suggested fees for every-day work such as milk fever, calvings, cleansings, speys, castrations, and so on.

The B.V.A. may answer that it has all these problems under review; that may be, but I think it is not truly representative. Many of its leaders are in the stage of life when peace and quiet are the object of their endeavour. I suggest to all colleagues (and emphasise what Mr. Straiton has pointed out) that this problem must be tackled vigorously and with due haste.

Yours faithfully,
ROSS W. GRAHAM.

13, Barton Street,
Tewkesbury, Glos.
July 29th, 1957.

Our correspondent's final paragraph, that the leaders of the Association are in what has poetically been called "The sere and yellow leaf," is hardly consistent with the facts. Among those whose names as Officers for 1957-8 will be put to the Annual General Meeting at the end of this month, the President-elect (in private practice) qualified in 1928, the Junior Vice-President (in practice) qualified in 1940, and the Honorary Secretary (in practice) qualified in 1942.—Editor.